CCD-F340E

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

SONY
SONY
Video8
CCD
AF
Handycam

Handycam
Video 8

SPECIFICATIONS

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	PAL colour, CCIR standards
Usable cassette	8 mm video format cassette
Tape speed	SP: Approx. 20.051 mm/sec. LP: Approx. 10.058 mm/sec.
Recording time	SP mode: 1 hour 30 min LP mode: 3 hours (P5–90)
Playback time	SP mode: 1 hour 30 min LP mode: 3 hours (P5–90)
Fast forward time	Approx. 6 min. 30 sec. (P5–90)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder (black and white)
Lens	Combined 6 × power zoom lens f = 9–54 mm, F1.4 with macro Filter diameter: 46 mm
Auto focus system	Infrared autofocus
Colour temperature	Auto: From the light at a tungsten lamp to the light on a slightly overcast day.
Minimum illumination	4 lux
Illumination range	4 lux–100,000 lux (0.4–9,294 footcandles)
Recommended illumination	More than 300 lux (28 footcandles)
Aperture correction	Automatic

Input and output connector

Video output	Phono jack, 1 Vp-p, 75 ohms unbalanced sync negative
Audio output	Phono jack, −10dBs, at output impedance less than 2.2 kilohms
RFU DC OUT	Special minijack, 5V DC
Earphone jack	Minijack, 8-ohm impedance
Remote jack	Stereo mini-minijack
MIC jack	Minijack, −66 dBs, low impedance With 2.5–3 V DC output, impedance 6.8 kilohms
Microphone power output jack	Special minijack, 5 V DC

Display in the viewfinder

Mode and caution indicators
Mode: REC/STBY
    BACK LIGHT
    ZERO MEM
Caution: BATTERY
    DEW
    TAPE END
    CASSETTE
    CAUTION
Time/date indication
Title color indication
Shutter speed indication

— Continued on next page —

8 VIDEO CAMERA RECORDER

SONY®

MICROFILM

General

Power requirements	Battery compartment 6 V/7.5 V
Power consumption	6.5 W (camera recording) including the viewfinder
Installation	Vertically
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Dimensions	Approx. 116 × 127 × 302 mm (w/h/d) (4 5/8 × 5 × 12 in.)
Weight	Approx. 1.1 kg (2 lb 7 oz) excluding the battery and cassette
Microphone	Electret condenser microphone, omni-directional monaural type
Supplied accessory	Lithium battery CR2025 (1)

Precautions for replacement of CCD imager block.

- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL

1-1. Location and Function of Parts and Controls . . . 4
1-2. Power Sources 5
1-3. Easy Camera Recording with Automatic Adjustment 7
1-4. Insert Recording 9
1-5. Manual Focusing 10
1-6. Back Light Adjustment 11
1-7. Shutter Speed Adjustment 11
1-8. Zooming 12
1-9. Close-ups (Macro) 12
1-10. Recording Date or Time 13
1-11. Recording a Title 14
1-12. Use of an External Microphone 15
1-13. Preparation for Playback 15
1-14. Playback 17
1-15. Use of the Tape Counter 18
1-16. Troubleshooting 19

2. DISASSEMBLY

2-1. Removing the View Finder 20
2-2. Removing the Cabinet (Left) 20
2-3. Removing the Cabinet (Right) 20
2-4. Separating the Camera and VTR Blocks 20
2-5. Removing the VC-38 (CCD Imager), VC-39, and VC-40 Boards 21
2-6. Removing the LS Lid 21
2-7. Opening the VA-41 Board 22
2-8. Opening the SS-86 Board 22
2-9. Removing the Cassette Arm 22
2-10. Removing LS Cassette Compartment Assembly 22

3. DIAGRAMS

3-1. Circuit Boards Location 23
3-2. Overall Block Diagram 24
3-3. Camera Block Diagram 28
3-4. Auto Focus Block Diagram 34
3-5. Digital Titler Block Diagram 35
3-6. Video Block Diagram 37
3-7. Servo/System Control Block Diagram 42
3-8. Mechanism Controller (μPD78112-GF) 47
3-9. System Control – Camera Block Interface 50
3-10. System Control – Video, Audio Block Interface 50
3-11. System Control – Servo Peripheral Circuit Interface 51
3-12. System Control – Peripheral Circuit Interface . . 54
3-13. Audio Block Diagram 56
3-14. Power Supply Block Diagram 59
3-15. Viewfinder Block Diagram 63

Section *Title* *Page*

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

- Vide/Audio Block IC Block Diagrams 65

4-1. Frame Schematic Diagram 67
4-2. Printed Wiring Boards and Schematic Diagrams 72

- Camera (1): VC-38, VC-39, and VC-40 Boards 72
- Camera (2): VC-38 Board 85
- Digital Titler: SS-86 Board 94
- Video/Audio: SS-86, VA-41, and MC-24 Boards 102
- Servo/System Control: SS-86, SW-92, ZM-8, PA-13, CC-7, and FP-53 Boards 112
- Mode Control: FC-16, FV-1, FD-6, and EJ-4 Boards 122
- Viewfinder: VF-13, TL-18, and TL-19 Boards 127

4-3. Hybrid IC Schematic Diagrams 132

- DT-71 Board 132
- MX-7 Board 134
- PR-20 Board 135

4-4. Semiconductors 137

5. EXPLODED VIEWS

5-1. Right Cabinet Assembly 139
5-2. Left Cabinet Assembly 140
5-3. Cassette Arm and Frame Assemblies 141
5-4. LS Cassette Compartment Assembly 142
5-5. Chassis Assembly (1) 143
5-6. Chassis Assembly (2) 144
5-7. Camera Assembly 145

6. ELECTRICAL PARTS LIST

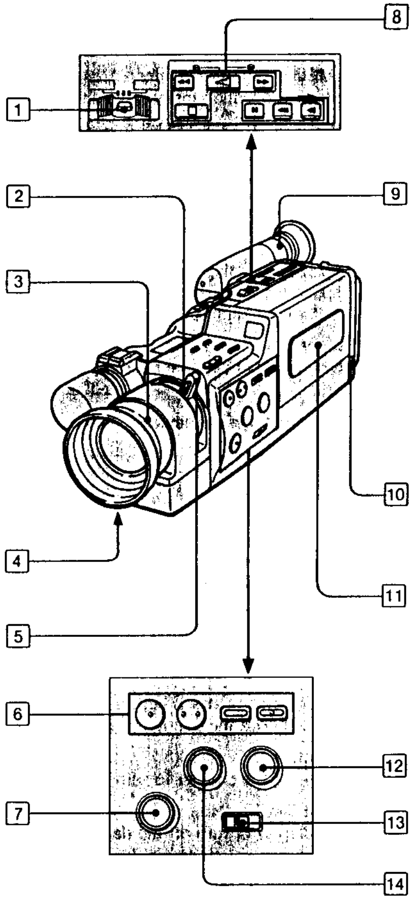
- FP-53 Board 146
- VF-13 Board 146
- TL-18 Board 147
- TL-19 Board 147
- VC-38 Board 147
- VC-39 Board 148
- VC-40 Board 150
- SS-86 Board 152
- VA-41 Board 156
- FV-1 Board 162
- FD-6 Board 162
- EJ-4 Board 162
- FC-16 Board 162
- MC-24 Board 164
- PA-13 Board 164
- ZM-8 Board 164
- SW-92 Board 164

- Hardware List 165

SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF PARTS AND CONTROLS

A-1



For details on the use of each control, refer to the pages indicated in the circle.

A-1

1 **POWER switch**
CAMERA: For camera recording
PLAYER: For playing back or editing tapes
OFF: Power off

2 **Macro set button ⑫**

3 **Focus ring [illegible]**

4 **START/STOP button**
Used for low angle recording.

5 **Zoom lever ⑫**

6 **SUPERIMPOSE buttons [illegible]**
Used to record the title.
TITLE 1 button
TITLE 2 button
MEM (memory) button
COLOR button

7 **BACK LIGHT button [illegible]**

8 **Tape transport buttons**
◀ (playback)
◀◀ FF (fast forward)
▶▶ REW (rewind)
■ (stop)
❚❚ (pause)
◀❚❚ (frame-by-frame)
◀❚ (slow)

9 **Viewfinder ⑧**
The picture being recorded or played back can be monitored in monochrome here. Also, data such as caution indicators and function mode are displayed on the viewfinder screen.

10 **BATT (battery eject) knob ⑥**

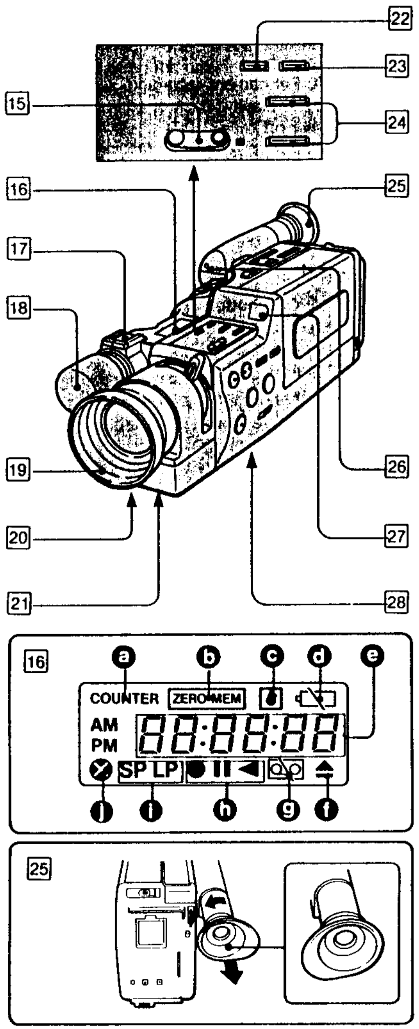
11 **Cassette holder**

12 **SHUTTER SPEED button [illegible]**
Used to select the shutter speed.

13 **AUTO LOCK switch**
Normally set to the left AUTO LOCK position.

14 **FOCUS button [illegible]**
Used for manual focusing.

A-2



A-2

15 **EDITSEARCH button ⑨**

16 **Display window ⑧**
ⓐ COUNTER indicator
ⓑ ZERO MEM (memory) indicator
ⓒ Moisture condensation inside the unit.
ⓓ Blinks when the battery is weak.
ⓔ Indicates the time, date, or the tape counter.
ⓕ Blinks when moisture has condensed on the tape, when the tape approaches its end during camera recording.
ⓖ Lights steadily when no cassette is inserted. Blinks when the tape approaches its end.
ⓗ Tape operation mode indicators
ⓘ Tape speed indicator
ⓙ Lights when the slit in the head is clogged.

17 **Accessory shoe**
Attach an optional external microphone, video light, etc.

18 **Built-in microphone (monaural)**

19 **Lens hood**

20 **Infrared beam detector**
The infrared beam reflected from the object to be shot is received here during auto focusing. Do not cover here.

21 **Infrared beam emitter**
Transmits an infrared beam toward the object to be shot during auto focusing. Do not look into it for a long time when recording with auto focusing. Do not cover here.

22 **ZERO MEM (zero memory) button**
Used to memorize the counter zero point.

23 **RESET button**
Press to reset the counter to zero.

24 **DATE and TIME buttons [illegible]**
Press to display or turn off the date or time.

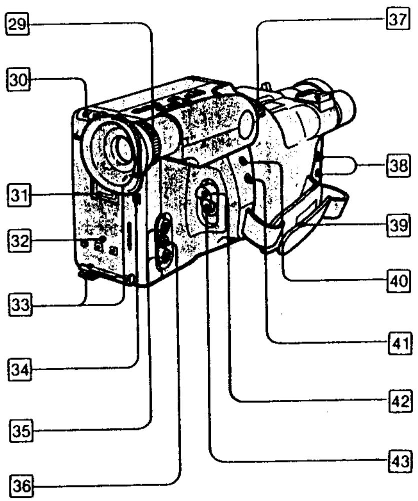
25 **Eyecup**
The eyecup is attached for the right eye.
For the left eye, detach the eyecup holder and attach it as illustrated.

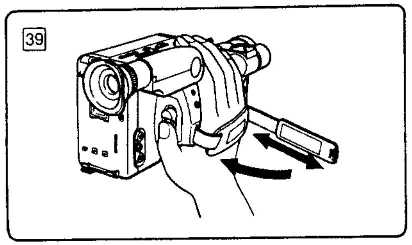
26 **Camera recording/battery lamp**
Lights during camera recording. It blinks when the battery is exhausted.

27 **White balance sensor**
This is the sensor for auto white balance adjustment.
During recording, do not cover the sensor.

28 **Tripod receptacle**

A-3





A-3

29 **Viewfinder lens adjustment ring**
Adjust to your eyesight to assure good focus. Be sure to adjust this ring when shooting for the first time.

30 **Cassette eject button**

31 **Lithium battery compartment ❼**

32 **Battery mounting surface**

33 **Hooks for shoulder strap**
- Attach a shoulder strap.

34 **REC MODE (recording mode)/EDIT switch**
Switch it depending on the operating mode.

Mode	Recording	Playback	Editing
Setting	SP LP	EDIT	EDIT
Function	REC MODE switch	EDIT switch	

35 **VIDEO/AUDIO OUT (output) jacks (phono jacks)**

36 **RFU DC OUT (RFU adaptor DC output) jack (special minijack)**
Supplies power to the RFU-89EA/ASA RFU adaptor.

37 **Power zoom button ❽**

38 **MIC jack and DC OUT (microphone power output) jack**
Connect an external microphone.
The MIC jack accepts Sony "plug-in-power" microphones and supplies power to them.

39 **Grip strap**
Adjust the length so that your thumb can easily manipulate the START/STOP button.

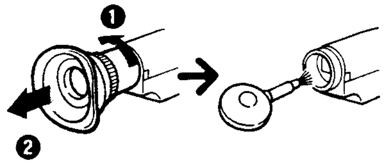
40 **REMOTE connector (stereo mini-minijack)**

41 🎧 **(earphone) jack (minijack)**

42 **STANDBY switch**
Slide up to set the unit to recording pause mode.

43 **START/STOP button**
Press to start and stop camera recording.

A-4



1-2. POWER SOURCES

Selection of Power Sources

This manual shows the operations on one of the following power sources.

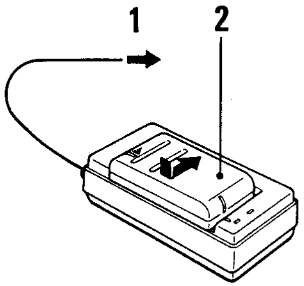
Place		Power source	Accessory to be used
	Indoors	House current	AC power adaptor AC-V30 (supplied) or AC-V55 (page 9)
	Outdoors	Battery pack	Battery pack NP-55 or NP-77 (page 8)
	In the car	12 V or 24 V car battery	AC power adaptor AC-V55 and car battery cord DCC-16AE (page 9)

Notes on power source
- Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted cassette tape. If this is done by accident, supply the power again immediately and turn on the power switch.
- Be careful not to let any metal object touched on the metal part on the battery pack or AC power adaptor. When the battery pack is not being used, keep it in its case.

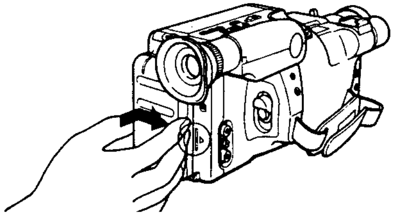
Optional Accessories for Charging
- **AC-V55 AC power adaptor**
Two battery packs can be charged simultaneously.
- **BCA-70 or BCA-80 battery charge adaptor, ACP-88 AC pack and NPA-55 battery adaptor**
For charging, insert an NP-55 into the NPA-55.

To remove dust from inside the viewfinder A-4
Detach the eyecup as illustrated and clean the surface of the Braun tube with a blower.

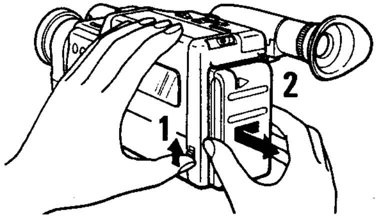
B-1



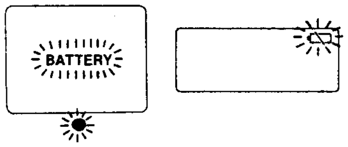
B-2



B-3



B-4



Battery Pack — NP-55 or NP-77

First, charge the battery pack B-1
Use the supplied AC-V30 AC power adaptor.
The charging time is about 1 hour for an NP-55 battery pack, or about 2 hours for an NP-77 battery pack.

1 Connect the AC-V30 to a wall outlet.
2 Attach the battery pack to the AC-V30.
Align the grooves on the battery pack with those on the AC-V30, and while pressing the battery pack slide it as illustrated.

To attach the battery pack to the video camera recorder B-2
Align the right side of battery pack with the white line on the recorder, and while pressing the battery pack, slide it to the right.
Make sure that the battery is fitted completely to the mounting surface. Imperfect fit may damage the projections on the recorder.

To remove the battery pack B-3
While pressing the BATT knob in the arrow direction, slide and pull out the battery pack as illustrated.

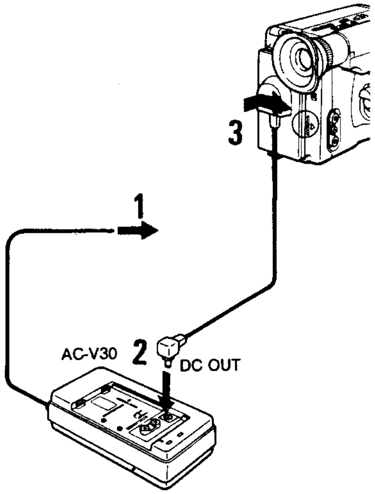
Battery life
A fully-charged NP-55 battery pack provides approximately 40 minutes of continuous camera recording, and an NP-77 provides approximately 80 minutes of continuous camera recording.

Notes
- The video camera recorder consumes power even in the recording pause mode. When recording short scenes using the recording pause mode, the battery life is less than half that of continuous recording.
When recording is not to be started soon, turn off the power with the STANDBY switch.
- If the battery pack is not fully charged or if it is used in a cold place, its operating time is also shortened.

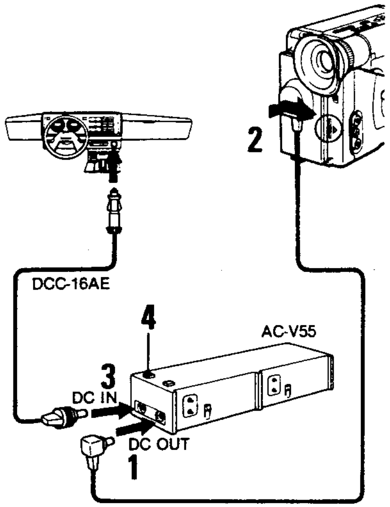
When the video camera recorder is not in use, remove the battery pack.
If the battery is installed, even if the POWER switch is set to OFF, a very small amount of electric current flows.

When the battery becomes weak B-4
The BATTERY indication and red lamp blink in the viewfinder and the 🔋 indication blinks in the display window.
Replace the battery pack with the fully charged one.

B-5



B-6



Using the NP-22 battery pack
A fully-charged NP-22 battery pack can operate this unit for approximately 60 minutes. For using the NP-22, an optional NPA-22 battery adaptor is necessary.

House Current — Using AC Power Adaptor B-5

1 Connect the AC power adaptor to a wall outlet.
2 Insert the connecting cord supplied with the AC-V30 AC power adaptor into the DC OUT jack on the AC power adaptor.
3 Align the right side of the connecting plate with the white line on the recorder, and while pressing the connecting plate, slide it to the right.

To remove the connecting plate for the AC power adaptor from the video camera recorder
While pressing the BATT knob on the recorder, slide and pull out the connecting plate.

The optional AC-V55 AC power adaptor can also be used to operate this recorder on house current.

Car Battery B-6

Use the DCC-16AE car battery cord and the AC-V55 AC power adaptor.

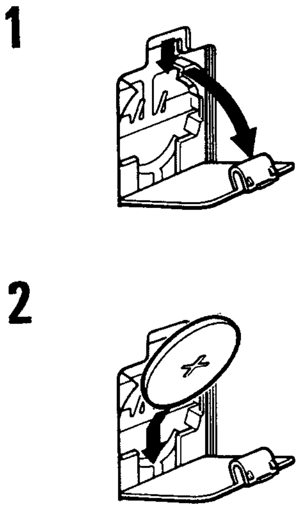
1 Insert the connecting cord supplied with the AC-V55 into the DC OUT jack on the AC-V55.
2 Align the right side of the connecting plate with the white line on the recorder, and while pressing the connecting plate, slide it to the right.
3 Connect the DCC-16AE car battery cord to the DC IN jack on the AC-V55 and to the cigarette lighter socket of a car (12 V or 24 V).
4 Press the POWER switch on the AC-V55.

After using, press the POWER switch on the adaptor again.

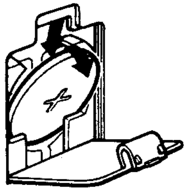
To remove the connecting plate from the video camera recorder
While pressing the BATT knob on the recorder, slide and pull out the connecting plate.

The optional DCP-55 DC pack (supplied with a car battery cord) can also be used to operate this recorder on a 12V or 24V car battery.

C-1



C-2



Lithium Battery C-1

To insert the lithium battery
This unit uses a lithium battery to activate the clock and to keep a title in memory. Before operating the unit for the first time, install the supplied lithium battery:

1 Open the cover of the lithium battery compartment on the battery mounting surface.
2 Install the supplied CR2025 lithium battery with the ⊕ side facing out.
3 Close the cover.

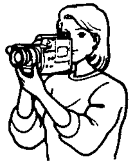
To remove the lithium battery C-2
Press the side of the battery in the direction as indicated for installation.

Lithium battery life
Approximately 1 year in normal operation.
When the lithium battery becomes weak, the time indication will blink on the viewfinder screen for about 7 seconds.
In this case, replace the battery with a Sony CR2025.

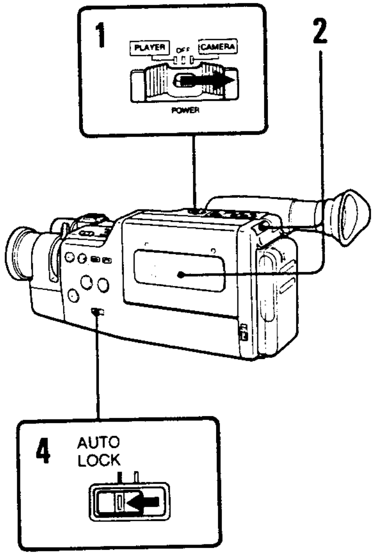
Notes on lithium battery
- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

1-3. EASY CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

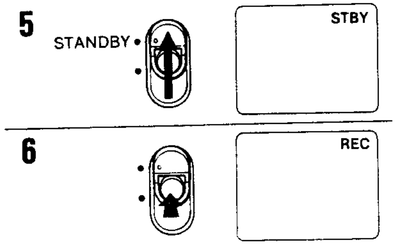
F-1



F-2



F-3



How to Record

Hold the camera recorder as in the illustration.
If your nose touches the recorder, adjust the angle of the viewfinder. F-1

F-2
1 While pressing the small button, set the POWER switch to CAMERA.
2 Insert the cassette.
3 Set the REC MODE/EDIT switch to LP or SP, according to the length of the programme to be recorded.
The recording time of a cassette in the LP mode is twice as long as that in the SP mode.
4 Set the AUTO LOCK switch to AUTO LOCK.
5 Slide the STANDBY switch up. F-3
The unit will enter the recording pause mode.
6 Press the START/STOP button.
Recording will start.

Check on the viewfinder screen
STBY: Displayed during recording pause mode.
REC: Displayed during recording.

To stop recording
Press the START/STOP button again.
The unit will enter the recording pause mode.
Avoid rough handling or mechanical shock to the unit. A smooth transition between scenes may not be made.

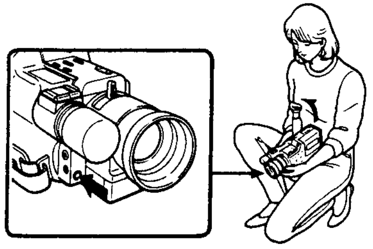
To check the last portion of the previous recording
1 Set the recorder in recording pause mode by pressing the START/STOP button.
2 Press the − EDITSEARCH button momentarily.

The last few seconds of the recorded portion are rewound and then the recorded picture is monitored on the viewfinder screen. The unit then enters the recording pause mode.

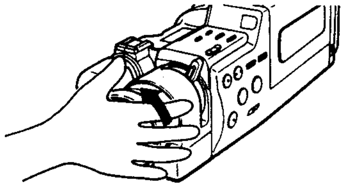
If the picture has not been recorded
The video head may be contaminated. Clean the heads using the Sony V8-25CL video head cleaning cassette.

After using
Slide the STANDBY switch down and set the POWER switch to OFF. (You need not press the center button when setting the switch to OFF.)

F-4



F-5



F-4

For low angle recording
The viewfinder can be turned 90 degrees up.
1 Slide the STANDBY switch up.
2 Press the START/STOP button on the front.

When attaching the lens hood, filter or conversion lens, hold the focus ring.

When removing, press it with the palm of your hand and turn it counterclockwise. F-5

Note on power source
If the POWER switch is moved during recording, the tape will stop.

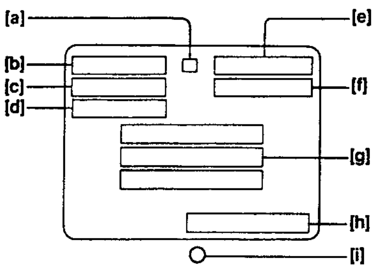
Notes on light sources
- Should you shoot a subject in bright conditions such as sunlight just after shooting in a dark place, the picture may not appear on the viewfinder screen. In this case, move the camera away from the subject to resume the normal condition.
- A vertical band may appear when a subject such as a candle flame or a light is shot against a dark background.

Notes on playback on another VTR
- To view the picture which has been recorded on this unit, set the monitor switch of the recorder for playback to the STD (standard) position.
- When recording on this unit using a tape on which PCM stereo sound has previously been recorded, set the monitor switch of the video cassette recorder for playback to the STD (standard) position. Otherwise, the sound may not be heard or may be distorted.

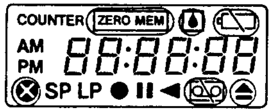
Notes on automatic adjustment
- During recording, do not cover the white balance sensor.
- During recording with auto focusing, do not turn or stop the focus ring forcibly.
- Keep the lens and the white balance sensor clean.

Under certain conditions, auto focusing will not operate properly (see page 10).

F-6



F-7



Indications inside the Viewfinder and in the Display Window F-6 F-7

[a] **White mark**
The FOCUS switch has been set to the manual condition.
[b] **Shutter speed** (see page 11.)
[c] **Title colour** (see page 14.)
[d] **BACK LIGHT**
The BACK LIGHT button has been pressed (see page 11.)
[e] **STBY**
Recording is momentarily stopped (recording pause mode).
REC
Recording is going on.
[f] **ZERO MEM**
The ZERO MEM button has been pressed.
[g] **BATTERY**
Weak battery.
CAUTION
The unit cannot function normally.
DEW
Moisture condensation inside the unit.

CASSETTE
No cassette has been inserted or the safety tab of the inserted cassette is slid out.
TAPE END
The tape is at its end.
[h] **Date or time** (see page 13.)
[i] **Camera recording/battery lamp**
Lights during camera recording. It blinks when the battery is exhausted.

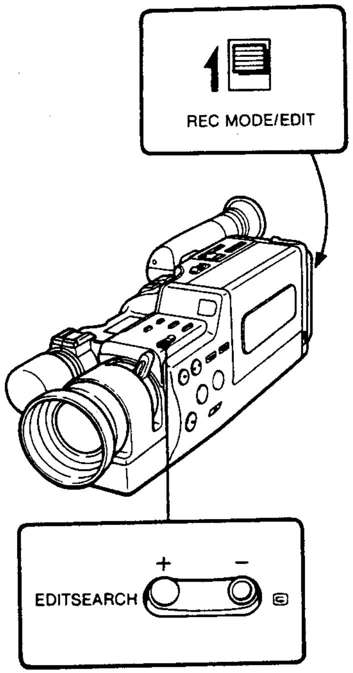
Indicators for caution

Display window F-7	Inside the viewfinder F-6
▭	BATTERY
⊡	TAPE END
⏏	CASSETTE
◙	DEW
⊗	CAUTION

Indicators for the setting of the switch

Display window F-7	Inside the viewfinder F-6
	BACK LIGHT
ZERO MEM	ZERO MEM
	■

F-8



Instant Playback on the Spot F-8

You can monitor the picture just recorded on the viewfinder screen.

1 While pressing the small button, set the POWER switch to CAMERA.
2 Slide the STANDBY switch up.
3 Set the REC MODE/EDIT switch to the upper position.
4 Press the "–" side of the EDITSEARCH button to view the playback picture in reverse.
5 Press the "+" side of the EDITSEARCH button to view the playback picture.

To resume recording in the LP mode, slide the REC MODE/EDIT switch down.

During Recording, to Record Again on the Previous Recorded Portion

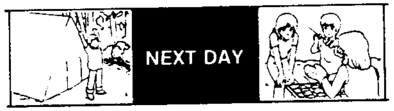
1 Slide the STANDBY switch up.
2 Set the REC MODE/EDIT switch to the upper position.
3 Locate the point from which the recording is to begin again by monitoring the picture on the viewfinder screen.
   ❶ Press the "+" side of the EDITSEARCH button to advance the picture at a normal playback speed, or the "–" side to reverse the picture.
   ❷ At the desired point, release the EDITSEARCH button. The unit will be set to recording pause mode.
4 Set the REC MODE/EDIT switch to the previous recording mode.
5 Press the START/STOP button to start recording.

Smooth recording can be made even if the recording is stopped and started again, or even if the power is turned off and on again, provided that the cassette is not removed. But, if the cassette has been removed, proceed as above.

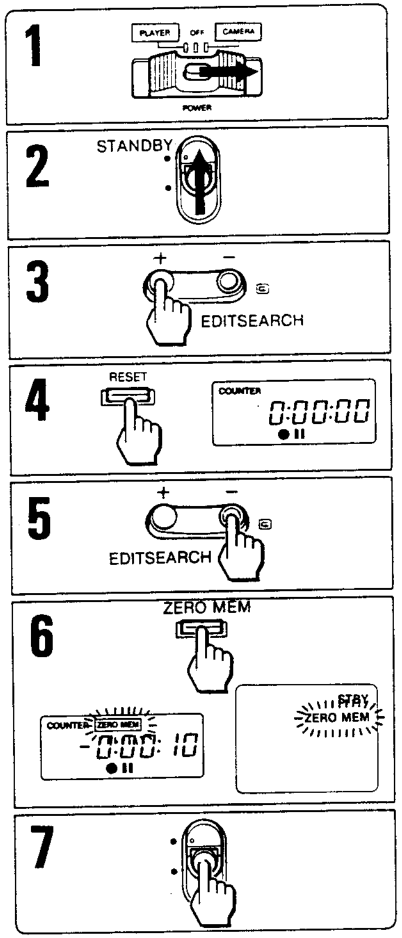
1-4. INSERT RECORDING

● Using EDITSEARCH button

G-1



G-2



You can insert (record) video and audio simultaneously from the camera onto any recorded tape. G-1

Operation G-2

- Monitor the picture being inserted on the viewfinder screen.
- Select the same tape speed as was used for already recorded portion with the REC MODE/EDIT switch.

1 While pressing the small button, set the POWER switch to CAMERA.
2 Slide the STANDBY switch up to set the unit to recording pause mode.
3 Keep pressing the "+" or "–" side of the EDITSEARCH button and release the button at the point where the insert should **end.** The unit will be set to recording pause mode.
4 Display the counter in the display window and press the RESET button. The counter is reset to zero. (For an accurate ending point, press the RESET button immediately after the EDITSEARCH button is released and while the still picture is displayed.)
5 Keep pressing the "–" side of the EDITSEARCH button and release the button at the point where the insert should **begin.**
6 Press the ZERO MEM button. The insert ending point is stored in memory.
7 Press the START/STOP button. Insert recording will begin.

The insert recording will stop automatically near the counter zero point.

To cancel ZERO MEM mode
Press the ZERO MEM button so that the ZERO MEM indicator disappears.

To insert the date or time
Follow steps 1 through 6 above, press the DATE or TIME button to display the date or time indication on the viewfinder screen and then press the START/STOP button.

Notes on ZERO MEM Mode
ZERO MEM mode is cancelled automatically in the following cases.

- When an insert recording is completed.
- When the position of the POWER switch is changed.
- When the power is turned off.
- When the cassette is ejected.

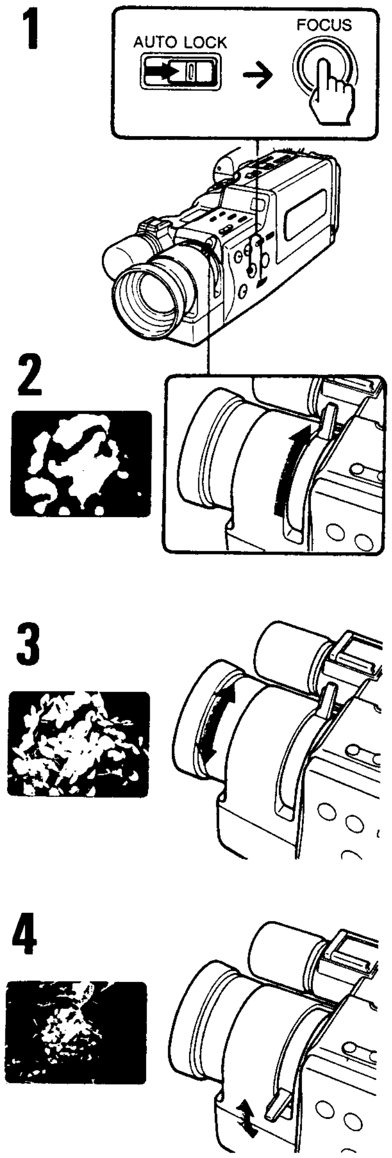
To restore it, press the ZERO MEM button again.

Notes

- When recording pause mode lasts for approximately 5 minutes, pause mode will be automatically released and the unit will be set to stop mode.
- When the inserted tape is played back, the picture may be distorted at the end of the inserted program.

1-5. MANUAL FOCUSING

H-1



Use manual focusing when shooting subjects difficult to focus automatically (listed on page 20).

H-1

1 Set the AUTO LOCK switch to the right and press the FOCUS button.
2 Turn the manual zoom lever to the telephoto position (54) to make the subject as large as possible in the viewfinder.
3 Turn the focus ring to achieve sharp focus.
4 Set the desired shot length using the manual zoom lever.

Some helpful hints

- When shooting a scene with lots of movement in bright light, the subject can be kept in good focus by setting the zoom lever to the wide-angle position and the focus ring to 2 m, regardless of the distance between the subject and the recorder.
- When shooting in low light situations such as indoors, the depth of field in proper focus is very shallow. For best results, shoot at wide angles, after focusing in telephoto.
- The figures on the focus ring indicate the distance between the subject and the lens surface.
- Recommended illumination of this unit is more than 300 lux (28 footcandles). If shooting is done indoors or under other circumstances where light is insufficient, video lights must be used for best results. Under adequate light condition, the depth of field in proper focus is wider and a sharper picture will be recorded.

Poor Conditions for Auto Focusing H-2

To shoot subjects listed below you must use manual focusing.

[a] **Black objects which absorb the infrared beam**
Ex. dark curtains or shade

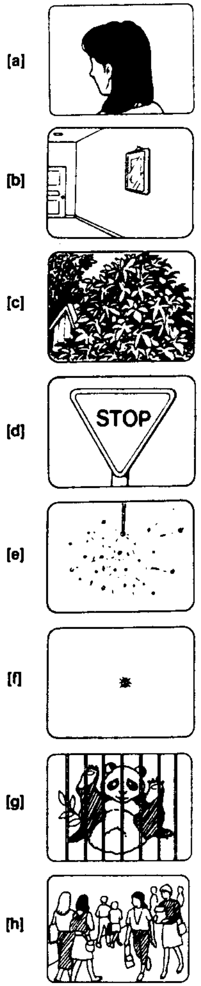
[b] **Objects in which the infrared reflection disperses**
Ex. a smooth slanting surface (Auto focusing functions when the camera is aimed squarely at the subject.)

[c] **Objects in which the infrared reflection is not sufficient**
Ex. bushes, grass or plants in the telephoto position

[d] **Objects in which the infrared beam is reflected too much**
Ex. traffic signs, a white wall, a mirror, or a subject through plate glass

[e] **Objects not solid**
Ex. fireworks, candle flame or smoke

H-2



[f] **Exteremely small objects which do not cover more than 1/10 of the viewfinder's area**
Ex. insects

[g] **When there are other objects between the shooting object**
Ex. an animal inside a cage or baby inside a cot

[h] **Moving objects**
Ex. a crowd or sports with lots of movement

- **Objects which emit infrared beams themselves**
Ex. automatic doors or fluorescent lights

- **Objects 10–60 meters (33–200 feet) away from the recorder**

Other Uses of Manual Focusing

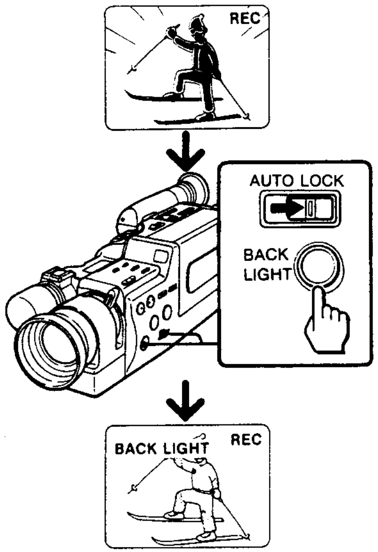
- When using special effects lenses or filters
- When shooting still subjects on a tripod
- To save battery wear
(When the AUTO LOCK switch is set to AUTO LOCK, the auto focusing operates to move the focus ring automatically even in recording pause mode. This causes the battery to wear continuously.)
- For focusing in close-up shooting, see page 12.

Auto focusing system of this camera recorder
This recorder adjusts focus automatically by emitting an infrared beam at the objects to be shot and then detecting the reflected beam. When the subject is approximately 3 meters away from the camera recorder, the focus is sharpest in the center of the screen. The camera recorder has the tendency, however, to focus a bit lower to the right when the subject is within 3 meters, and a bit higher to the left when the subject is more than 3 meters away.

Note
As the auto focusing of this camera recorder utilizes an infrared beam, it might malfunction when you use the camera recorder near another equipment that also emits an infrared beam such as a TV or VTR remote commander, or another camera recorder that uses an infrared beam for auto focusing.
It might also cause malfunctioning of such equipment.

1-6. BACK LIGHT ADJUSTMENT I

I



This unit adjusts the iris automatically. However, when shooting a subject that is backlit, set the AUTO LOCK switch to the right and press the BACK LIGHT button.
The BACK LIGHT Indication appears when the BACK LIGHT button has been pressed.

After shooting that particular scene, be sure to press the BACK LIGHT button again to release it. Otherwise the recorded picture will be too bright.
The BACK LIGHT indication goes out.

Note
The function will be released once the POWER switch is set to OFF.

Automatic White Balance Function

The automatic white balance function allows the unit to record an image with natural color tones in most kinds of light.
This insures that white will always recorded as white regardless of the light source.

Notes
- The auto white balance may not function under the following conditions.
  - Insufficient light
  - When lighting conditions change rapidly
  - When the camera is in a different light condition from the recorded subject
    ex. when the subject is under a spotlight
    when the subject is outdoors and the camera is indoors
  - Special light sources such as a natrium lamp
- Do not cover the white balance sensor.

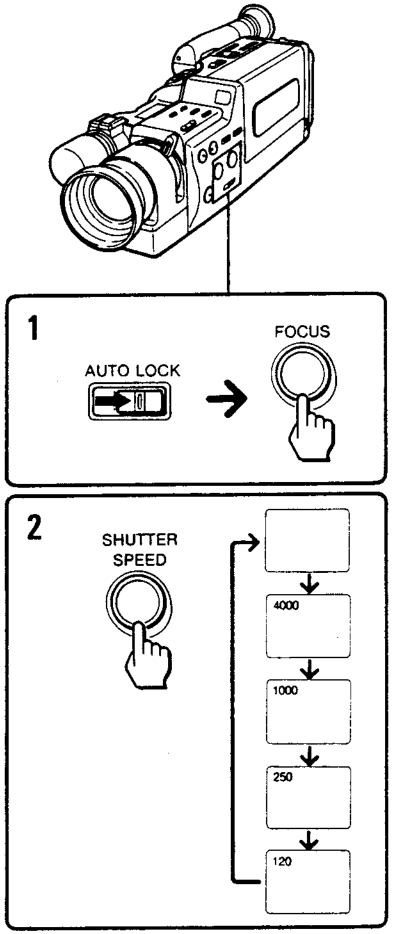
1-7. SHUTTER SPEED ADJUSTMENT

J-1

J-2

When a fast-moving subject is recorded at a normal shutter speed, its still picture may not be seen when played back J-1. This can be improved by increasing the shutter speed J-2.
The shutter speed of this unit can be selected from five speeds, 1/60 (normal speed), 1/4000, 1/1000, 1/250, 1/120.
However, when the shutter moves fast, it will not allow enough light to come into the lens, so the picture will be dark. Therefore, when recording at a high shutter speed, record in a brighter place than usual.
Choose an appropriate shutter speed according to the place and situation.
See the chart below for examples.

J-3



Example use	Recommended shutter speed
• On clear days, recording golf or tennis scenes (To view the hit ball clearly in the pause mode, set to 1/4000) • Recording the skiers	1/4000 or 1/1000
• On overcast days, recording a moving merry-go-round or jet-coaster • Recording outdoors from inside a vehicle (for stable shooting)	1/250
• Instead of the ND2 filter (To reduce the exposure level to approx. 1/2) • Recording indoors (for stable shooting)	1/120

J-3

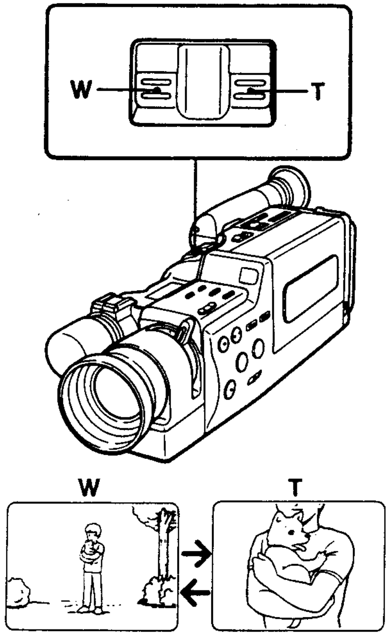
1 Set the AUTO LOCK switch to the right and press the FOCUS button.
2 Press the SHUTTER SPEED button repeatedly until the desired shutter speed indication appears on the viewfinder screen.
Each time the SHUTTER SPEED button is pressed, the indication changes:
No indication → 4000 → 1000 → 250 → 120
(1/60) (1/4000) (1/1000) (1/250) (1/120)

Auto focus will not function is this case.
When shooting, use manual focusing.

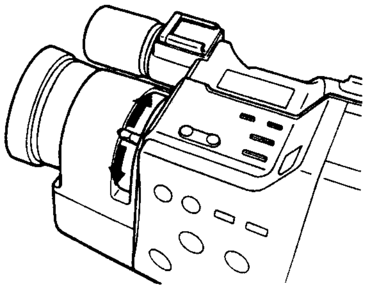
Notes
- When shutter speed 1/250 or more is selected, recording must be done under sunlight or video light.
- When the recording is done under a light discharged tube, such as a fluorescent lamp, sodium lamp, or mercury lamp, the brightness of the recorded picture may vary ("flicker").
  If flickers of fluorescent lamps affect the recording in 50 Hz areas, set the shutter speed to 1/120.
- When the shutter speed is changed during a camera recording of a TV screen, the brightness of the recorded picture may vary.
- When a very bright object is shot at a faster shutter speed, a light, vertical, belt-like line ("smear") may appear on the screen.

1-8. ZOOMING

K-1



K-2



The size of the subject in the scene can be changed.

Power Zoom K-1

— for smooth and constant zooming

Press the T side of the power zoom button for telephoto and the W side for wide-angle.
The zoom ring will move automatically.

Manual Zoom K-2

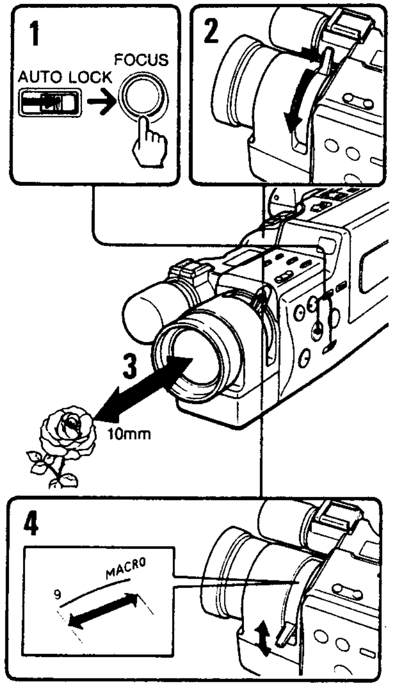
— to create a dramatic effect

Turn the manual zoom lever upward for telephoto and downward for wide-angle.

For more zooming effect
- Use an optional conversion lens (VCL-1546A or VCL-0746A).
  Auto focus, however, will not function in that case.
- The focal length of this unit is 9 mm to 54 mm. Converted into the focal length of a 35 mm camera, this means approximately F-48 mm to 288 mm.

1-9. CLOSE-UPS (MACRO) L

L



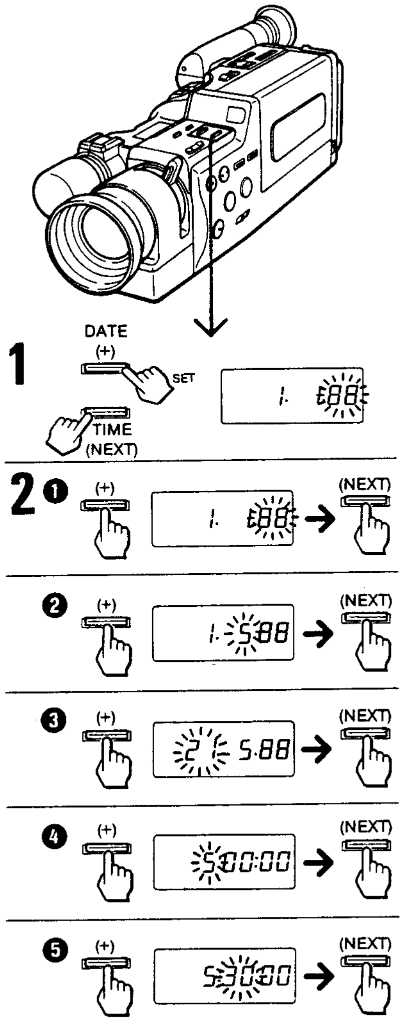
Even tiny objects can literally fill the screen for dramatic close-up effects.
Remove the lens hood before operation.

1 Set the AUTO LOCK switch to the right and press the FOCUS button.
2 Turn the zoom lever to the MACRO position, pressing the orange macro set button.
3 Bring the recorder as close as necessary to obtain the desired subject size.
  The subject can be as close as approximately 10 mm ($^{13}/_{32}$ in.) from the lens surface.
4 Turn the zoom lever within the MACRO range in orange to focus sharply.

Notes
- Auto focusing does not function properly in macro shooting.
- If the subject is closer than 10 mm, it cannot be brought into focus.
- When shooting in macro, the depth of field is very shallow, so pay attention to focus. To keep the subject in focus, use a tripod or monopod.
- Zooming is not possible during macro recording. To change the size of the subject, move the camera recorder closer or further away.

1-10. RECORDING DATE OR TIME

M-1



Once the date and the current time are adjusted, the date or time can be recorded together with the picture.

Before setting the date and time, make sure that the battery pack and lithium battery are installed.

To Set Date and Time M-1

1 Press the DATE and TIME buttons simultaneously **for more than 3 seconds.**
The date indication will appear in the display window (date/time setting mode).
The DATE button now functions as the + button and the TIME button functions as the NEXT button.

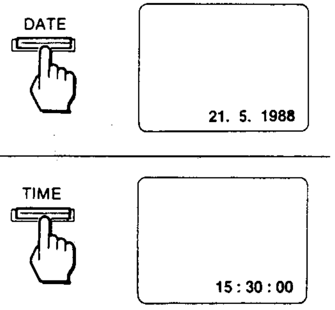
2 Adjust the ❶ year, ❷ month, ❸ day, ❹ hour and ❺ minute in sequence, following the illustration.
First adjust the blinking digits with the + button, and then press the NEXT button.
After adjusting the minute digits, press the NEXT button at the same time with an announced time signal.

The clock starts operating. There is no need to readjust the date and time as long as the lithium battery remains.

To clear the time indication from the display
Press the TIME (NEXT) button again.

The + button can be pressed in two ways
- When you keep the button pressed, the digits will advance continuously.
- When you press and immediately release the button, the digits will advance by one.

M-2



To check the preset date and time
Press the DATE or TIME button in the recording pause mode. When the same button is pressed again, the indication goes off.

To readjust an incorrect date or time
Set the unit to date/time setting mode and press the NEXT button repeatedly until the incorrect digit blinks. Correct it with the + button and press the NEXT button. After adjusting the minute digits, press the NEXT button at the same time with an anounced time signal.

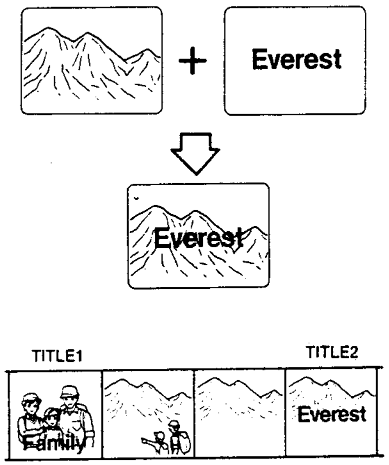
To Record the Date or Time M-2

During camera recording or in recording pause mode, press the DATE or TIME button to display the date or time on the viewfinder screen.
The date or time being displayed will be recorded together with the picture.

To stop recording the date or time
Press the DATE or TIME button again. The picture recording will continue.

1-11. RECORDING A TITLE

N-1



Before recording, memorize a title or figure. The memorized title or figure is superimposed onto the picture being recorded. N-1
- Two kinds of titles or figures can be memorized.
- The color of the title or figure can be selected from 8 colors.

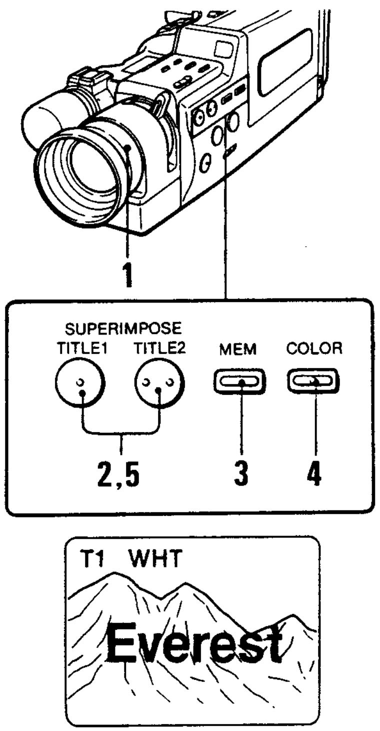
Preparations

To make a desired title card
Use a white and plane card and draw the title on it with a deep color (black is recommended for the best result) in thick letters.
If contrast is clear, a signboard can be memorized like the title card.

Before memorizing the title
1 Make sure that the lithium battery is installed. See page 7.
2 While pressing the small button, set the POWER switch to CAMERA.
3 Slide up the STANDBY switch to set the unit in the recording pause mode.

Notes
- When deciding the title size, check the effective picture size on your video monitor.
- To record the title, fix the title card and the video camera recorder.
- To memorize a title, use of an appropriate light is recommended for a better result.

N-2



To Memorize the Title N-2

1 Point the camera to the title card and adjust the focus.
2 Press the TITLE 1 or 2 button.
3 Press the MEM button to memorize the title.
4 Select the title colour while observing the colour indication in the viewfinder. Each push on the COLOR button cyclically changes the colour, as follows:

WHT (white) → BLUE → GRN (green) → CYAN
↑ ↓
BLK (black)←YEL (yellow)←VIO (violet)←RED

5 Press the TITLE 1 or 2 button (pressed in step 2) to turn off the title.

Notes
- The colour indication in the viewfinder is not recorded on the tapes.
- You can change the title colour even after starting the recording.

To check the title
To check the memorized title, press the TITLE 1 or 2 button. To turn off the title, press the button again.

To Record the Title

To record the title from the beginning
Press the TITLE 1 or 2 button in recording pause mode.

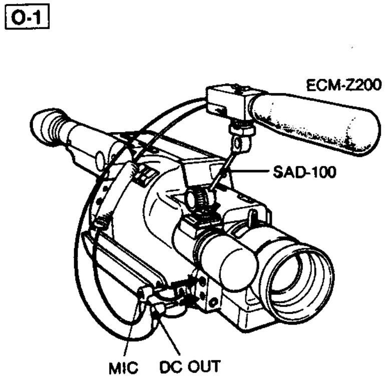
To record during camera recording
Press the TITLE 1 or 2 button at the point from which the title is to be inserted.
The memorized title will be recorded together with the picture.

To stop recording the title
Press the TITLE 1 or 2 button again. The picture recording will continue.

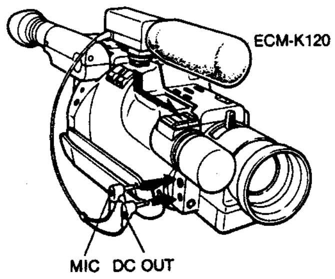
To record the title several times
By repeating the above procedure, you can record the title as many times as desired.

1-12. USE OF AN EXTERNAL MICROPHONE

O-1



O-2



The built-in microphone picks up sounds equally from all directions (omni-directional, monaural type).
By using an optional ECM-Z200 or ECM-K120 microphone, you can enjoy more efficient audio recording.

The **ECM-Z200** can zoom the sound as the lever is slid.
First, attach to the optional SAD-100 external microphone shoe. O-1

The **ECM-K120** can pick up sound in 3 zones and switch from zone to zone as the selector is set. O-2

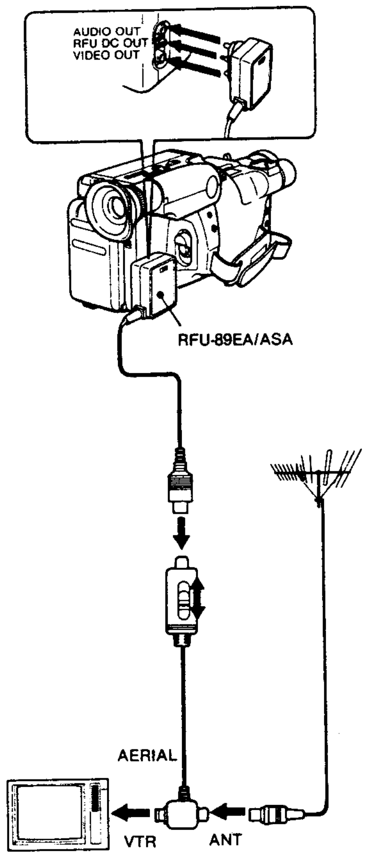
A variety of optional microphones.

- Omni-directional microphone: To pick up sounds equally from all directions
- Uni-directional microphone: To pick up specific sounds
- Supercardioid microphone: To isolate a sound
- Zoom microphone: To allow the field of recording to be changed.

Note
The built-in microphone will not operate when an optional microphone is connected to the MIC jack.

1-13. PREPARATION FOR PLAYBACK

P-1



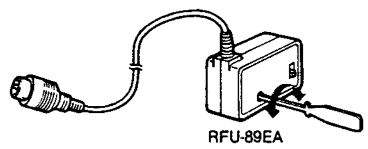
Connecting a TV without audio/video input connectors P-1

1. Connect the RFU-89EA/ASA RFU adaptor to the CCD-F340E.
2. Connect the aerial, CCD-F340E and TV to the aerial selector (supplied with the RFU-89EA/ASA).
   Use a 75-ohm coaxial cable for aerial connection.
3. RFU-89EA only: Set the I/G selector according to the TV system of your country.
4. Adjust one of the TV programme positions to receive the signal from the video camera recorder. See "Adjusting the TV" below.
5. Set the selector switch on the aerial selector as follows:

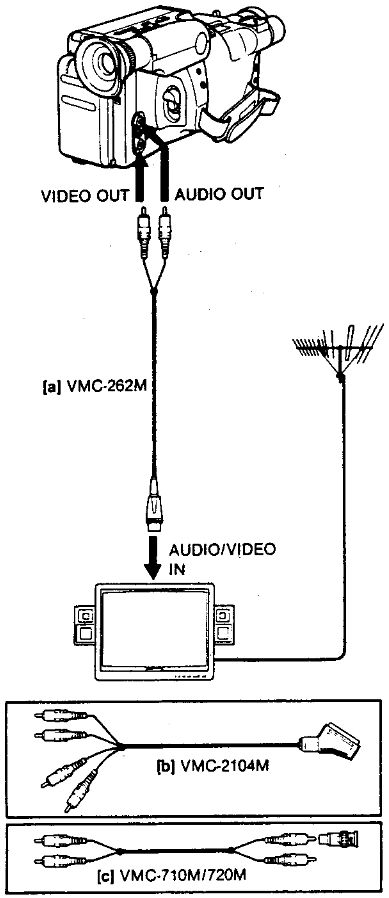
For viewing a playback picture → VTR
For viewing TV programmes → ANT

6. Select the same programme position on the TV as that selected in adjusting the TV.

P-2



P-3



Adjusting the TV with the RFU-89EA

1 Turn on the TV and select a programme position which is not being used to receive a TV station.
2 Set the POWER switch of the CCD-F340E to CAMERA and slide the STANDBY switch up.
3 Set the selector switch of the aerial selector to VTR.
4 Tune the TV until you see the picture and hear the sound from the CCD-F340E.

If the playback picture is not free of disturbance

1 Set the selector switch of the aerial selector to ANT.
2 Adjust the programme position of the TV to a channel between UHF channels 30 and 39 with the tuning control or the fine tuning control on the TV, so that the TV screen shows no picture and so that a steady rustling sound or no sound is heard.
3 Set the selector switch of the aerial selector to VTR.
4 Slowly turn the RF channel of the RFU-89EA with the supplied screwdriver, until the picture from the CCD-F340E becomes clear. P-2
Now the TV adjustment is complete.

Adjusting the TV with the RFU-89ASA

Select the CHANNEL selector on the RFU-89ASA to 0 CH or 1 CH, whichever is not active in your area, and select the same channel on the TV.

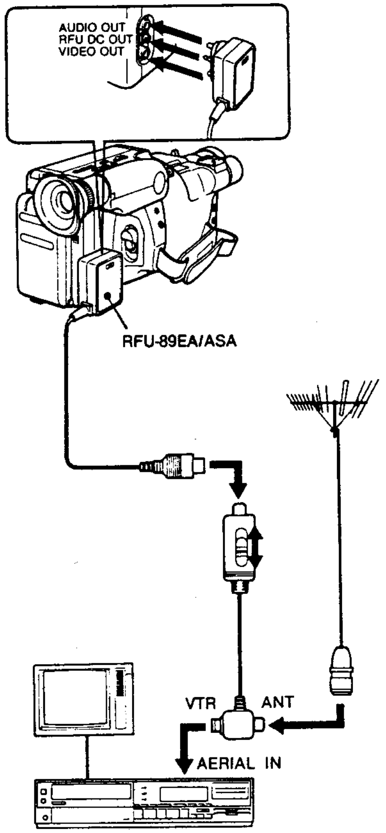
Connecting a TV (or colour monitor) equipped with audio/video input connectors P-3

Leave the TV aerial cable connected to the TV.

1 Connect the CCD-F340E to the TV using an optional connecting cable to match the connectors on the TV.
   [a] VMC-262M: to a 6-pin DIN connector
   [b] VMC-2104M: to a 21-pin connector (EUROCONNECTOR)
   [c] VMC-710M/720M: to phono and BNC-type connectors
2 Set the TV/VIDEO selector button on the TV as follows:

For viewing a playback picture → VIDEO
For viewing TV programmes → TV

P-4



Connecting a TV connected to another VTR without an input selector P-4

Connect the RFU-89EA/ASA RFU adaptor to the CCD-F340E.

1 Connect the RFU-89EA/ASA, aerial, and the VTR to the aerial selector (supplied with the RFU-89EA/ASA).
Use a 75-ohm coaxial cable for aerial connection.
2 RFU-89EA only: Set the I/G selector according to the TV system of your country.
3 Adjust one of the TV programme positions to receive the signal from the video camera recorder. See "Adjusting the TV" on page 33.
4 Set the selector switch on the aerial selector as follows:

For viewing a playback picture → VTR
For viewing TV programmes and playback picture of the VTR → ANT

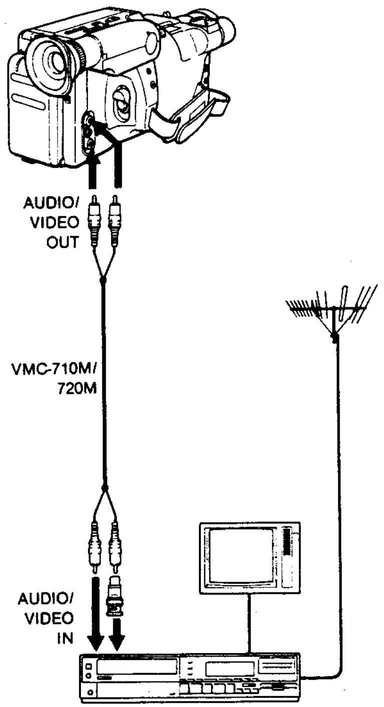
5 Select the same channel on the TV as that selected in adjusting the TV.

Connect the others as shown in the illustration.

Playback

1 Turn on the TV.
2 While pressing the small button, set the POWER switch on the CCD-F340E to PLAYER.
3 Set the selector switch on the antenna selector to VTR and select the channel for the VTR on the TV.
4 Insert a cassette into the CCD-F340E and press the ◁ button. Playback will start.

P-5



Connecting a TV connected to another VTR with an input selector P-5

Use the optional VMC-710M/720M connecting cord.

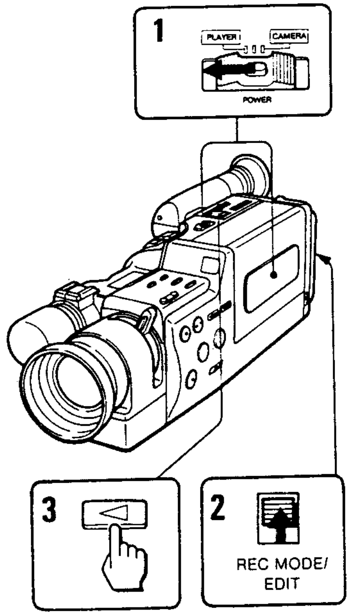
Set the selectors on the VTR as follows:
Input selector → LINE
TV/VTR selector → VTR

Note
When the VTR to be connected has stereo audio inputs, use the optional VMC-910MS/920MS connecting cord.

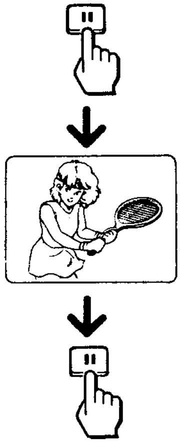
Playback
1 Turn on the VTR and TV.
2 While pressing the small button, set the POWER switch on the CCD-F340E to PLAYER.
3 Set the input selector on the VTR to LINE and select the channel for the VTR on the TV.
4 Insert a cassette into the CCD-F340E and press the ◁ button. Playback will start.

1-14. PLAYBACK

Q-1



Q-2



Turn on the TV (or colour monitor), and select the programme position for viewing a playback picture (or set the TV/VIDEO selector to VIDEO).

Q-1

1 While pressing the small button, set the POWER switch to PLAYER, and insert a cassette.
2 Set the REC MODE/EDIT switch in the upper position.
The unit detects the recorded mode of the tape, and adjust the tape speed automatically.
3 Press the ◁ button.
Playback will start.

To stop the tape, press the ■ button.

After using, be sure to set the POWER switch on the recorder to OFF.

To view a still picture Q-2
Press the **II** button during playback. To resume playback, press the **II** button again.

Monitoring a High-Speed Picture

During playback
1 In the playback mode, press the ◀◀ or ▶▶ button.
The picture will be monitored at high speed as long as it is kept pressed.
2 Release the ◀◀ or ▶▶ button at the desired point.
Normal playback will resume.

To View the Frame-by-Frame Playback Picture

Press the ◄II button during playback or in still picture mode.
To resume normal playback, press the ◄ button.

To View the Slow Motion Picture

Press the ◄I button during playback or in still picture mode.
To resume normal playback, press the ◄ button.

Notes
- If you move the position of the POWER switch during playback, the tape will stop. When you move the POWER switch to CAMERA in the playback pause mode, however, the unit will enter recording pause mode.
- When the pause mode lasts for 5 minutes or more, the unit will automatically enter the stop mode.
- Streaks will appear and the sound will be muted in the high-speed picture.
- When a tape is recorded in SP mode, a still picture and high-speed picture may be noisy with many streaks and become black and white. Streaks will be wider than those of an LP-recorded tape.

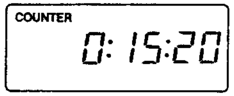
To adjust the frame-by-frame and slow playback pictures
In slow playback mode, press the "+" or "–" side of the EDITSEARCH button until a clear picture is obtained.
Repeat adjusting until a still picture is displayed clearest.

To adjust the still picture
If the still picture appears to shake, press the "+" or "–" side of the EDITSEARCH button until the picture stabilizes.

Note
The adjustment is retained in memory as long as the lithium battery is installed. Readjustment is only required when the equipment used for playback is changed or when tapes recorded on other equipment are played back on this unit. The noise may not be eliminated completely when a tape recorded on other equipment is played back in still or slow picture mode.

1-15. USE OF THE TAPE COUNTER

R-1



During recording or when a tape recorded in the SP mode is played back, the digits on the counter indicate the actual recording or playback time. When a tape recorded in LP mode on another recorder is played back on this unit, the counter counts approximately half the actual playback time.

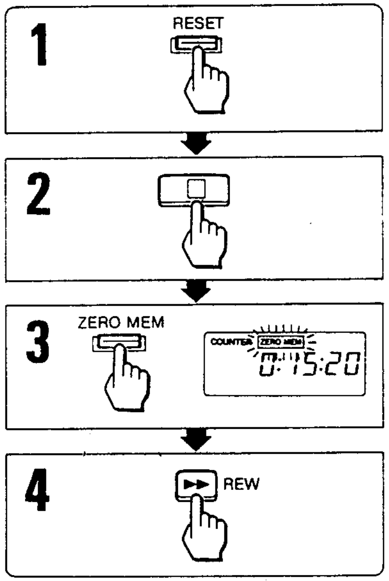
E.g. When the counter indicates "0:15:20" during playback of an LP-recorded tape, the tape was played back for approximately 30 minutes 40 seconds from the counter zero position. R-1

To Index the Whole Tape

Press the RESET button at the beginning of the tape so that the counter shows "0:00:00". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

Notes
- The counter reading and the point of the tape may not correspond exactly.
- The counter also operates for a blank, unrecorded portion of a tape.
- There will be a time lag of several seconds on the counter reading after repeated fast-forward and rewind operations or after playing back in slow mode for a long time.

R-2



To Return to a Pre-registered Point R-2

1 During recording or playback, press the RESET button at the point you later want to locate.
2 Press the ■ button when the recording or playback has finished.
3 Press the ZERO MEM button. The "ZERO MEM" indicator will blink in the display window.
4 Press the ►► or ◄◄ button.
The tape will be rewound or sent forward and stop automatically when the counter reaches approximately zero.

Notes
- The ZERO MEM button does not function during recording or playback mode.
- Be sure to press the ZERO MEM button when the tape is stopped.
- The ZERO MEM mode is cancelled automatically once the tape is rewound or sent forward to zero.

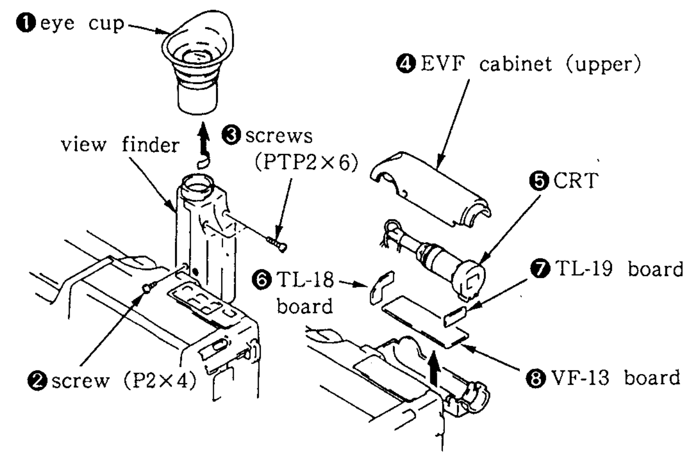
1-16. TROUBLESHOOTING

If you think you have a problem, double-check before calling the serviceman.
You may have overlooked something relatively simple!

Symptom	Cause (Trouble indicator)	Procedure
The power will not turn on.	The battery is not attached.	Attach the battery.
	The battery is exhausted.	Use a new battery.
	The AC power adaptor is not connected to a wall outlet.	Connect the adaptor to a wall outlet.
The START/STOP button does not operate.	The tape is affixed to the drum.	Remove the cassette with the cassette eject button.
	The tape is at its end. (TAPE END)	Rewind the tape or use a new one.
	The POWER switch is set to PLAYER.	Set it to CAMERA.
	The tab on the cassette is out (red). (CASSETTE)	Use a new casssette or slide the tab.
The tape does not move when a tape transport button is pressed.	POWER switch is set to CAMERA or OFF.	Set it to PLAYER.
	The tape is at its end.	Rewind the tape or use a new one.
The power turns off.	While being operated in the CAMERA mode, the recorder has been in the pause mode for more than 5 minutes.	Slide down the STANDBY switch, and slide it up again.
	The battery is exhausted. (BATTERY)	Use a charged battery.
A vertical band appears when a subject such as lights or a candle flame is shot against a dark background.	The contrast between the subject and background is too high; the camera is not malfunctioning.	—
The battery pack is quickly discharged.	The ambient temperature is too low.	—
	The battery pack has not been charged fully.	Charge the battery pack again.
The cassette cannot be removed from the compartment.	The battery is exhausted.	Use the charged battery or the AC power adaptor
The auto focusing function does not work.	The AUTO LOCK switch is set to the right.	Set the AUTO LOCK switch to AUTO LOCK.
	Shooting conditions are not suitable for auto focusing operation. (See page 10.)	Focus manually.
The colour of the playback is not appropriate.	The white balance sensor is covered.	Clear the sensor.
The image on the viewfinder screen is not clear.	The viewfinder lens is not adjusted.	Adjust the viewfinder lens.
The playback picture is not clear.	The REC MODE/EDIT switch is set to the "EDIT" position.	Set the REC MODE/EDIT switch to the upper position.
	The programme position for the VTR is not adjusted on the TV.	Adjust the TV.
The playback picture is too bright.	The BACK LIGHT button was not released during recording. (BACK LIGHT)	—
The picture is noisy.	The video heads may be contaminated.	Clean the heads using the Sony V8-25CL video head cleaning cassette. For details on cleaning, refer to the instructions furnished with the cleaning cassette. If the V8-25CL cleaning cassette is not available in your area, have the heads cleaned at the nearest Sony service facility.
No function except for cassette ejection works.	Moisture condensation has occurred. (DEW)	Remove the cassette and leave the unit for at least an hour.
The indicators in the viewfinder blink.	The lithium battery is not installed. (COUNTER)	Install the lithium battery.
	The lithium battery is exhausted. (COUNTER)	Use a new battery

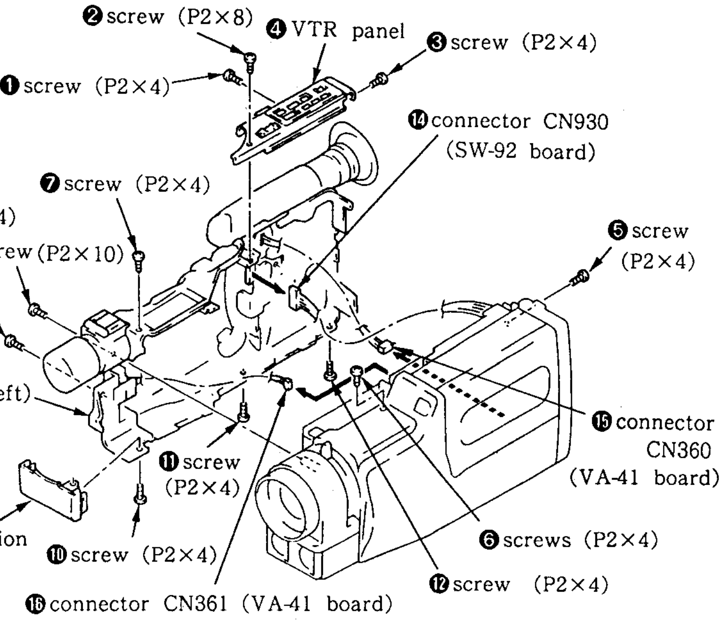
SECTION 2
DISASSEMBLY

2-1. REMOVING THE VIEW FINDER



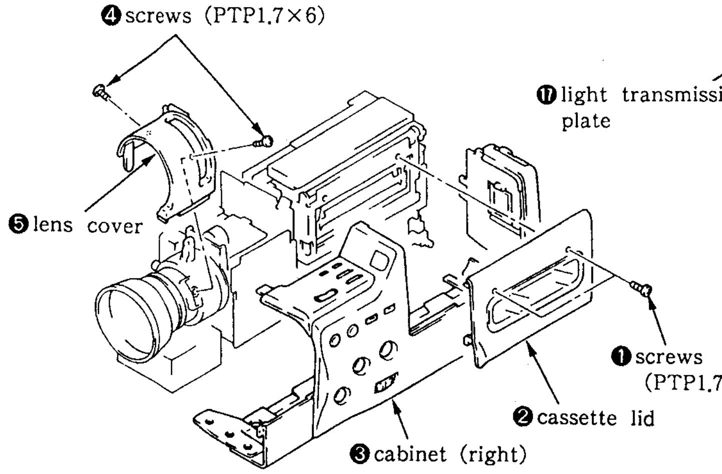
① eye cup
④ EVF cabinet (upper)
view finder
③ screws (PTP2×6)
⑤ CRT
⑥ TL-18 board
⑦ TL-19 board
② screw (P2×4)
⑧ VF-13 board

2-2. REMOVING THE CABINET (LEFT)



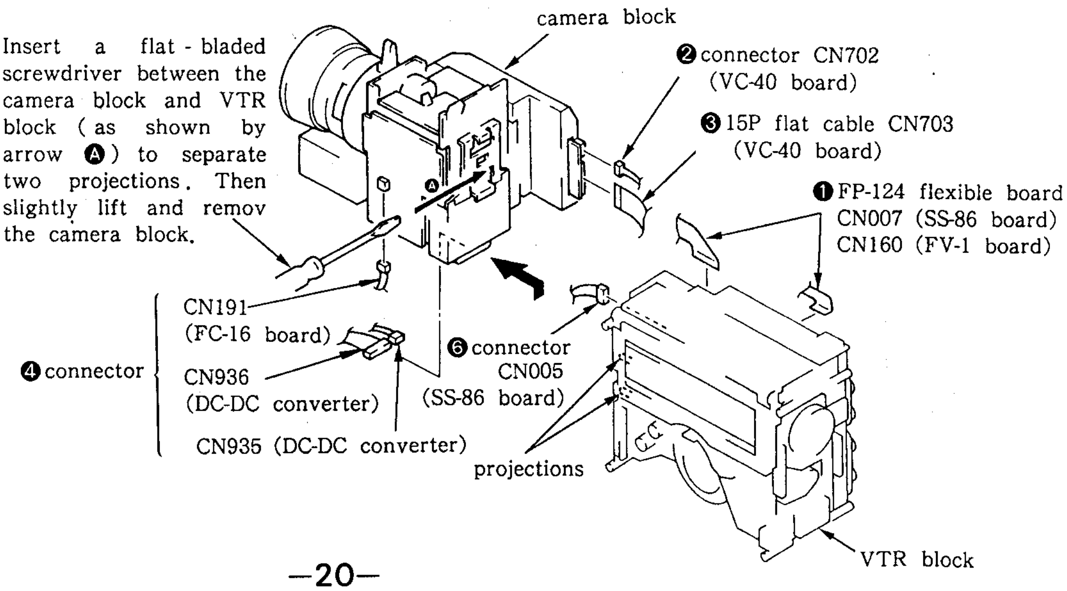
② screw (P2×8)
④ VTR panel
③ screw (P2×4)
① screw (P2×4)
⑭ connector CN930 (SW-92 board)
⑦ screw (P2×4)
⑨ screw (P2×4)
⑧ screw (P2×10)
⑤ screw (P2×4)
⑬ cabinet (left)
⑮ connector CN360 (VA-41 board)
⑪ screw (P2×4)
⑰ light transmission plate
⑩ screw (P2×4)
⑥ screws (P2×4)
⑫ screw (P2×4)
⑯ connector CN361 (VA-41 board)

2-3. REMOVING THE CABINET (RIGHT)



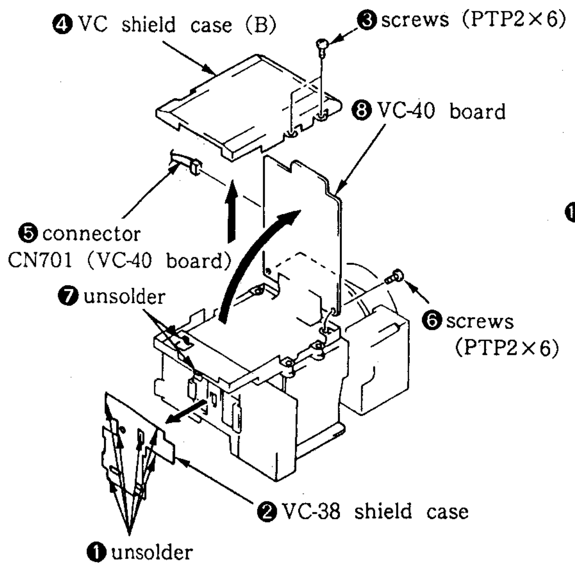
④ screws (PTP1.7×6)
⑤ lens cover
① screws (PTP1.7×5)
② cassette lid
③ cabinet (right)

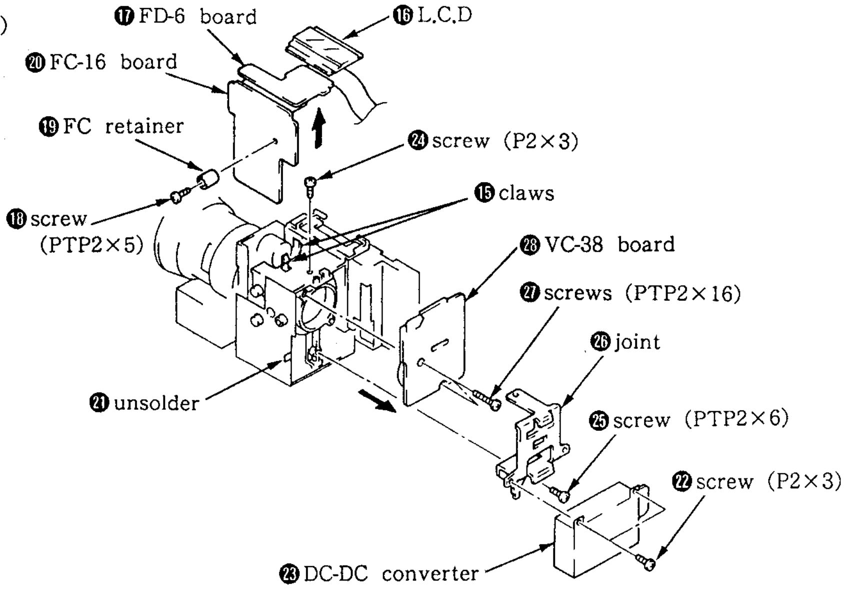
2-4. SEPARATING THE CAMERA AND VTR BLOCKS

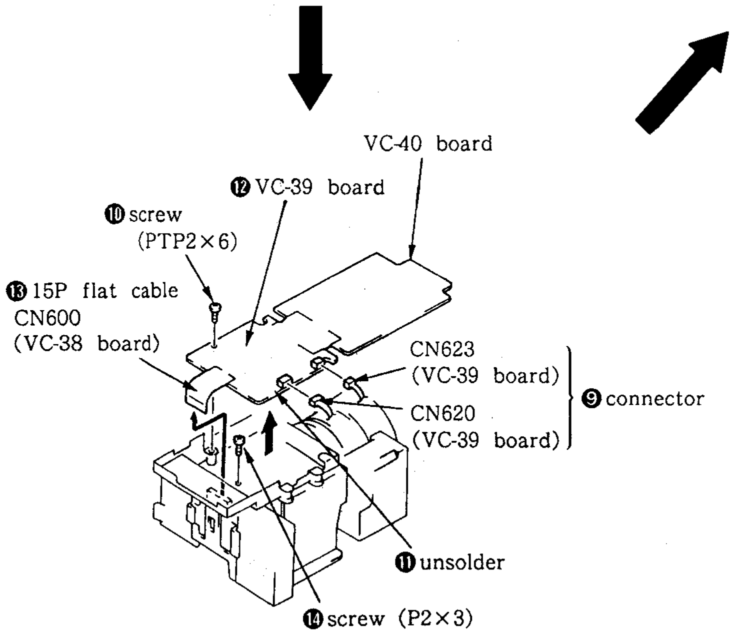

⑤ Insert a flat-bladed screwdriver between the camera block and VTR block (as shown by arrow Ⓐ) to separate two projections. Then slightly lift and remov the camera block.

camera block
② connector CN702 (VC-40 board)
③ 15P flat cable CN703 (VC-40 board)
① FP-124 flexible board CN007 (SS-86 board) CN160 (FV-1 board)
Ⓐ
④ connector
CN191 (FC-16 board)
CN936 (DC-DC converter)
CN935 (DC-DC converter)
⑥ connector CN005 (SS-86 board)
projections
VTR block

2–5. REMOVING THE VC-38 (CCD IMAGER), VC -39, AND VC-40 BOARDS


④ VC shield case (B)
③ screws (PTP2×6)
⑧ VC-40 board
⑤ connector
CN701 (VC-40 board)
⑦ unsolder
⑥ screws
(PTP2×6)
② VC-38 shield case
① unsolder

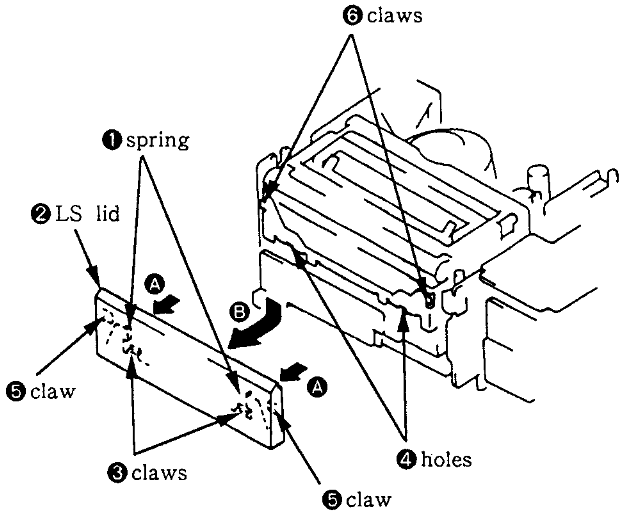

⑰ FD-6 board
⑯ L.C.D
⑳ FC-16 board
⑲ FC retainer
㉔ screw (P2×3)
⑮ claws
⑱ screw
(PTP2×5)
㉘ VC-38 board
㉗ screws (PTP2×16)
㉖ joint
㉑ unsolder
㉕ screw (PTP2×6)
㉒ screw (P2×3)
㉓ DC-DC converter


VC-40 board
⑫ VC-39 board
⑩ screw
(PTP2×6)
⑬ 15P flat cable
CN600
(VC-38 board)
CN623
(VC-39 board)
⑨ connector
CN620
(VC-39 board)
⑪ unsolder
⑭ screw (P2×3)

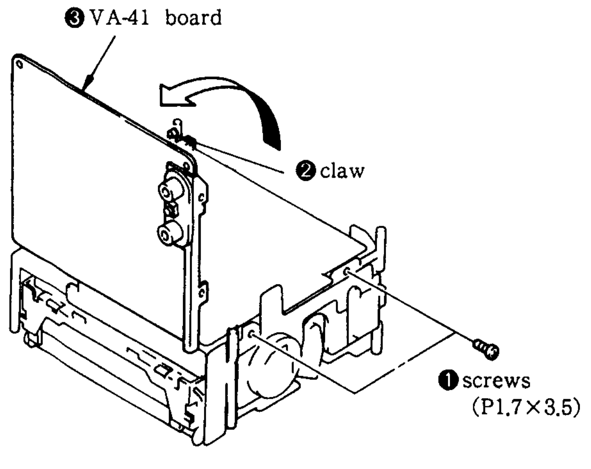
2–6. REMOVING THE LS LID

1) Insert a thin flat-bladed screwdriver into the spring ① at 2 points and push it in the direction of arrow Ⓐ, and then remove the LS lid ② in the direction of arrow Ⓑ.

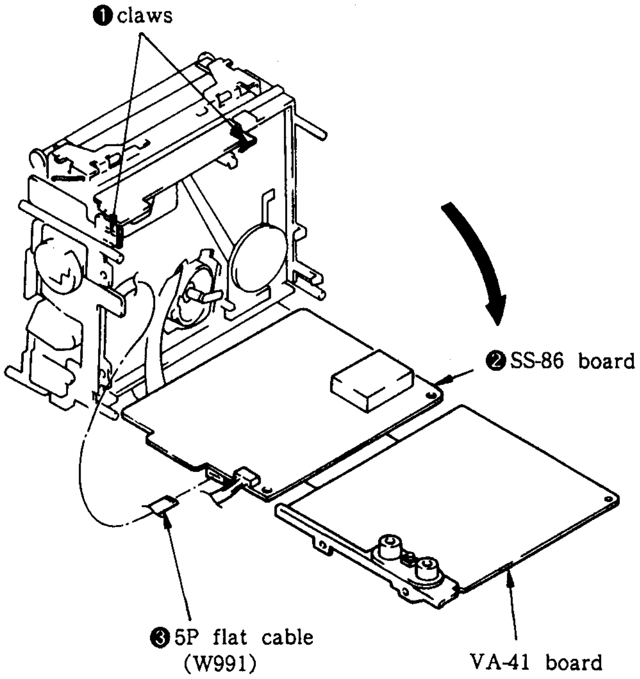
Note : To re-assemble, locate the two claws ③ at the back of each hole ④ at 2 points, and also the two claws ⑤ at the back of each claw ⑥ at 2 locations.


⑥ claws
① spring
② LS lid
Ⓐ
Ⓑ
Ⓐ
⑤ claw
③ claws
④ holes
⑤ claw

2-7. OPENING THE VA-41 BOARD

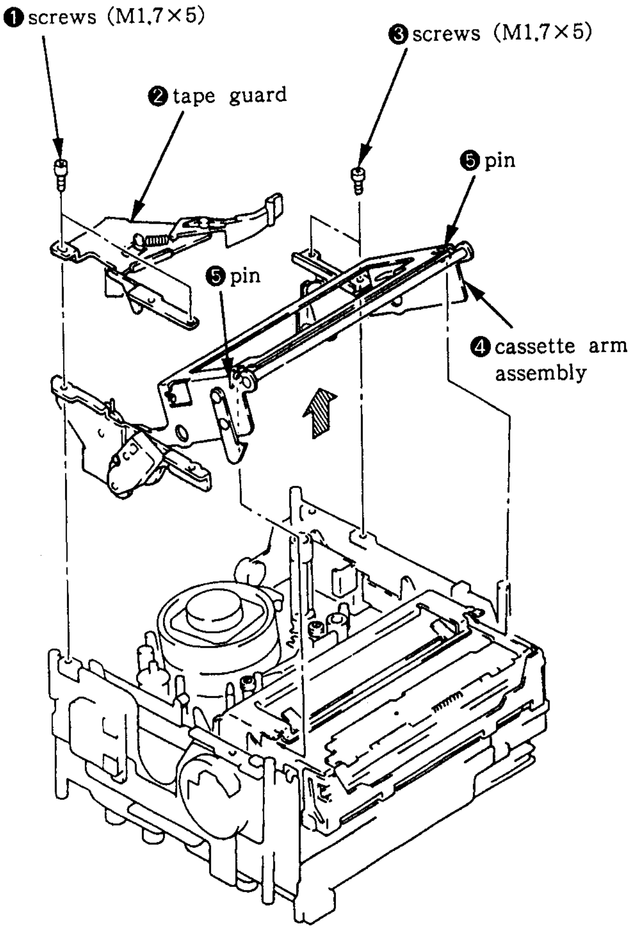

❸VA-41 board
❷claw
❶screws
(P1.7×3.5)

2-8. OPENING THE SS-86 BOARD

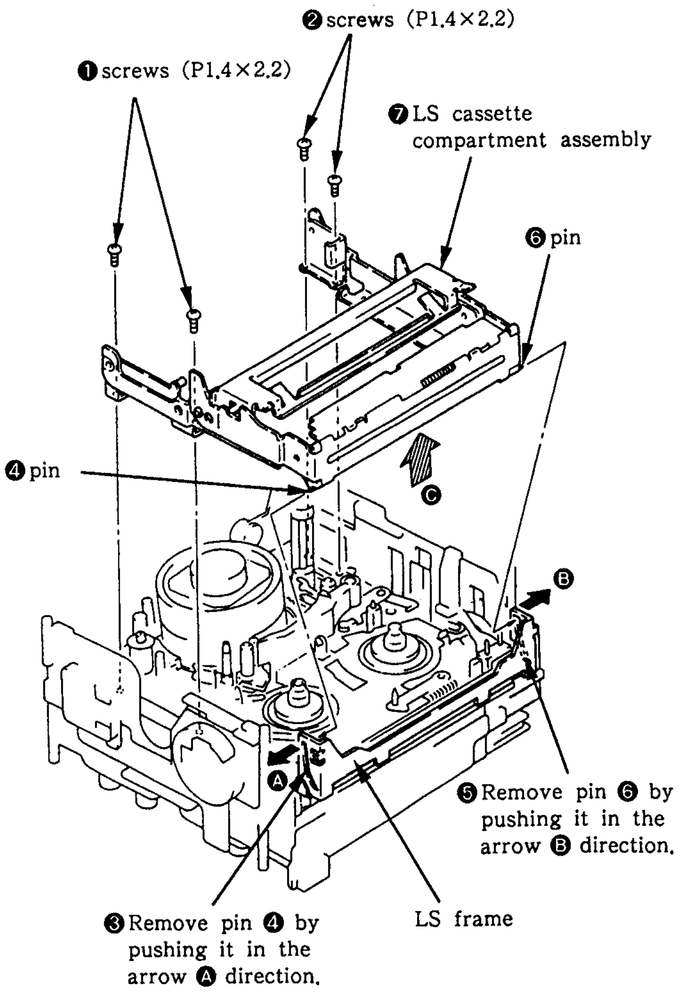

❶claws
❷SS-86 board
❸5P flat cable
(W991)
VA-41 board

2-9. REMOVING THE CASSETTE ARM

Note : To re-assembly the cassette arm assembly ❹, ajust it so that pin ❺ can be inserted in the correct position.

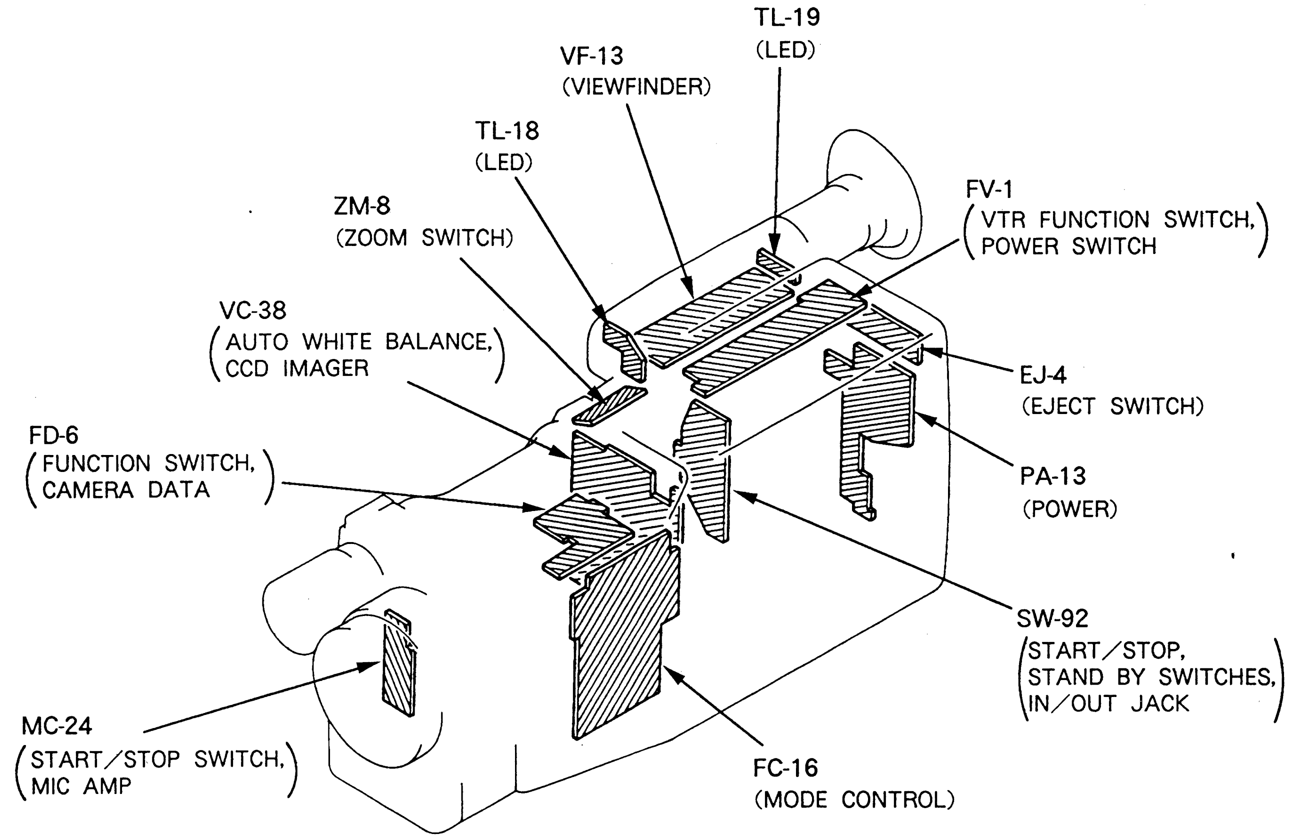

❶screws (M1.7×5)
❸screws (M1.7×5)
❷tape guard
❻pin
❺pin
❹cassette arm
assembly

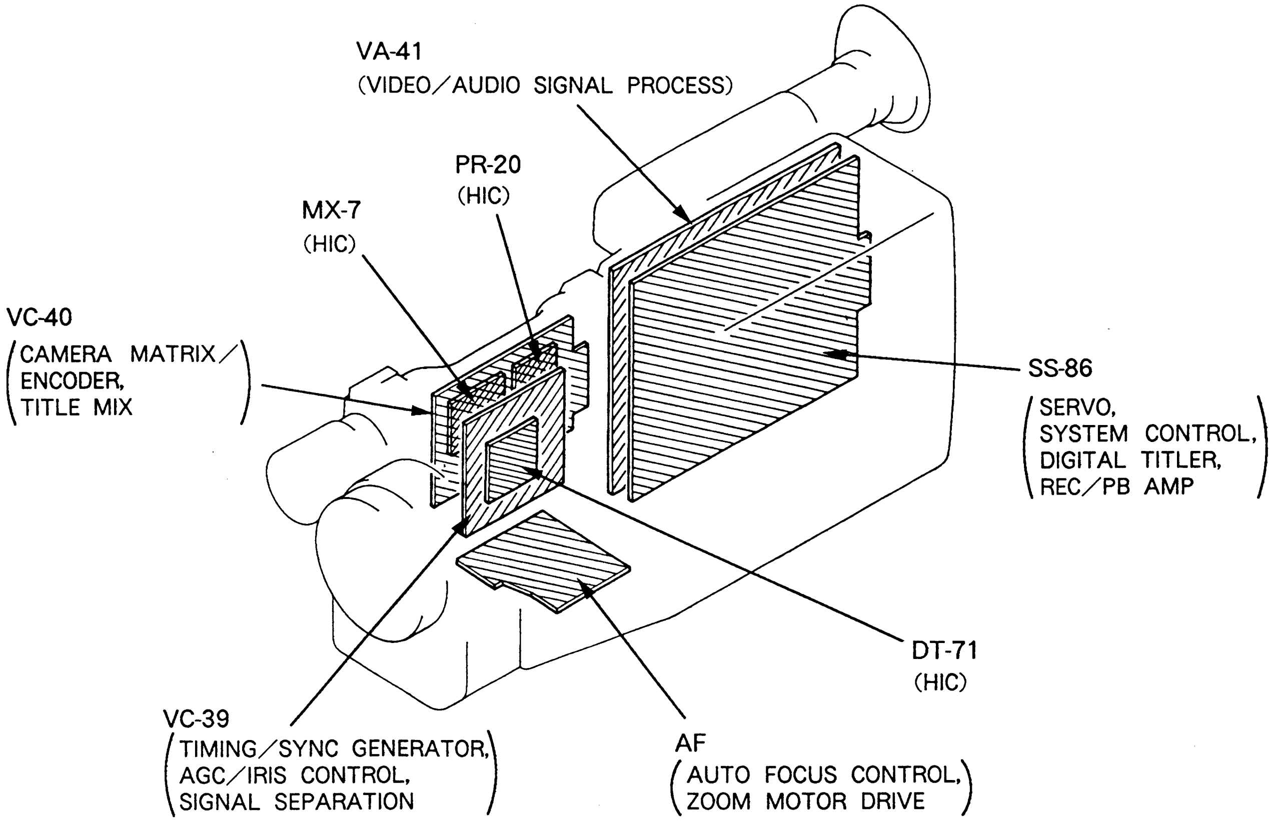
2-10. REMOVING LS CASSETTE COMPARTMENT ASSEMBLY


❷screws (P1.4×2.2)
❶screws (P1.4×2.2)
❼LS cassette
compartment assembly
❻pin
❹pin
Ⓒ
Ⓑ
Ⓐ
❺Remove pin ❻ by
pushing it in the
arrow Ⓑ direction.
LS frame
❸Remove pin ❹ by
pushing it in the
arrow Ⓐ direction.

SECTION 3
DIAGRAMS

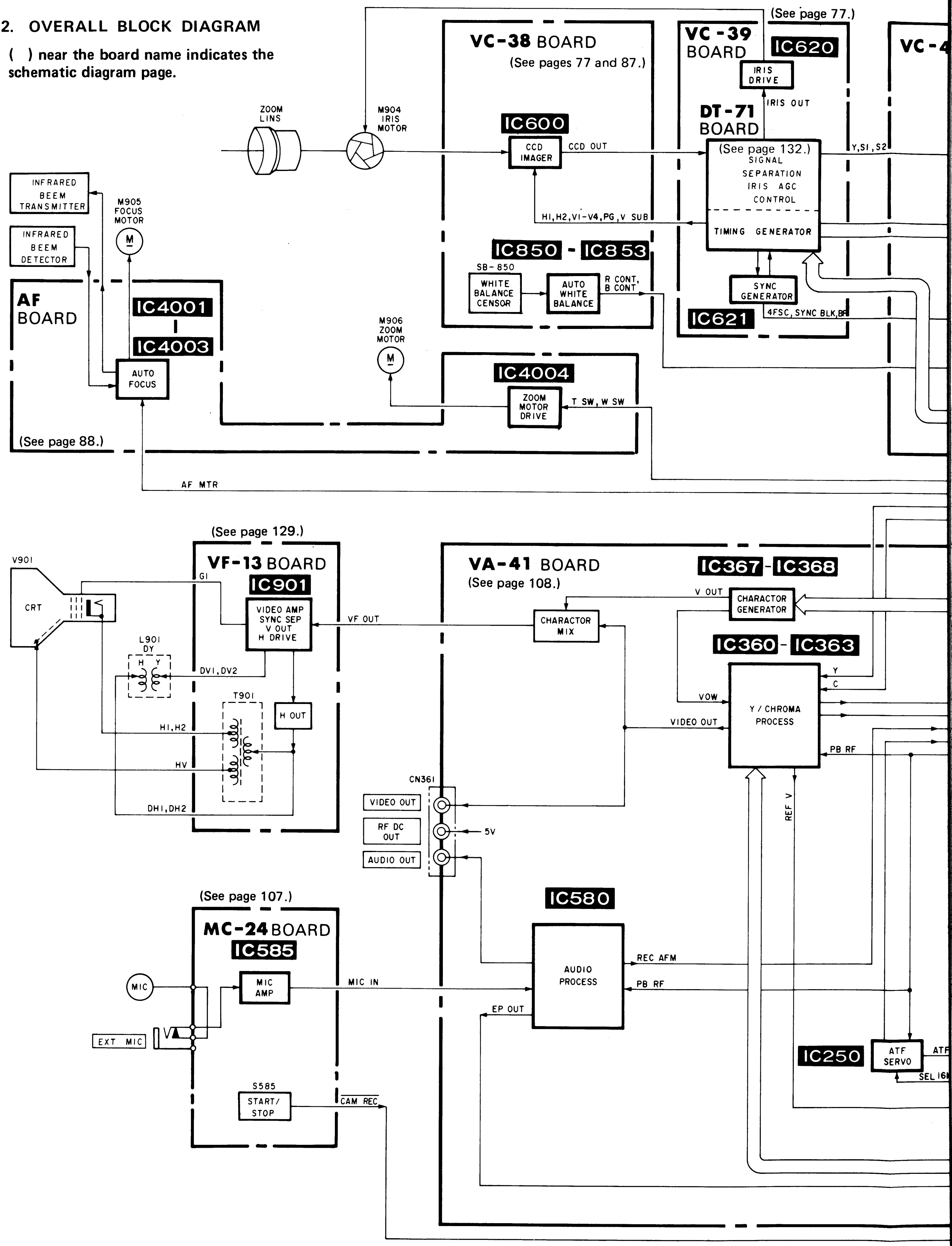
3-1. CIRCUIT BOARDS LOCATION


TL-19
(LED)
VF-13
(VIEWFINDER)
TL-18
(LED)
ZM-8
(ZOOM SWITCH)
FV-1
(VTR FUNCTION SWITCH, POWER SWITCH)
VC-38
(AUTO WHITE BALANCE, CCD IMAGER)
EJ-4
(EJECT SWITCH)
FD-6
(FUNCTION SWITCH, CAMERA DATA)
PA-13
(POWER)
SW-92
(START/STOP, STAND BY SWITCHES, IN/OUT JACK)
MC-24
(START/STOP SWITCH, MIC AMP)
FC-16
(MODE CONTROL)


VA-41
(VIDEO/AUDIO SIGNAL PROCESS)
PR-20
(HIC)
MX-7
(HIC)
VC-40
(CAMERA MATRIX/ ENCODER, TITLE MIX)
SS-86
(SERVO, SYSTEM CONTROL, DIGITAL TITLER, REC/PB AMP)
DT-71
(HIC)
VC-39
(TIMING/SYNC GENERATOR, AGC/IRIS CONTROL, SIGNAL SEPARATION)
AF
(AUTO FOCUS CONTROL, ZOOM MOTOR DRIVE)

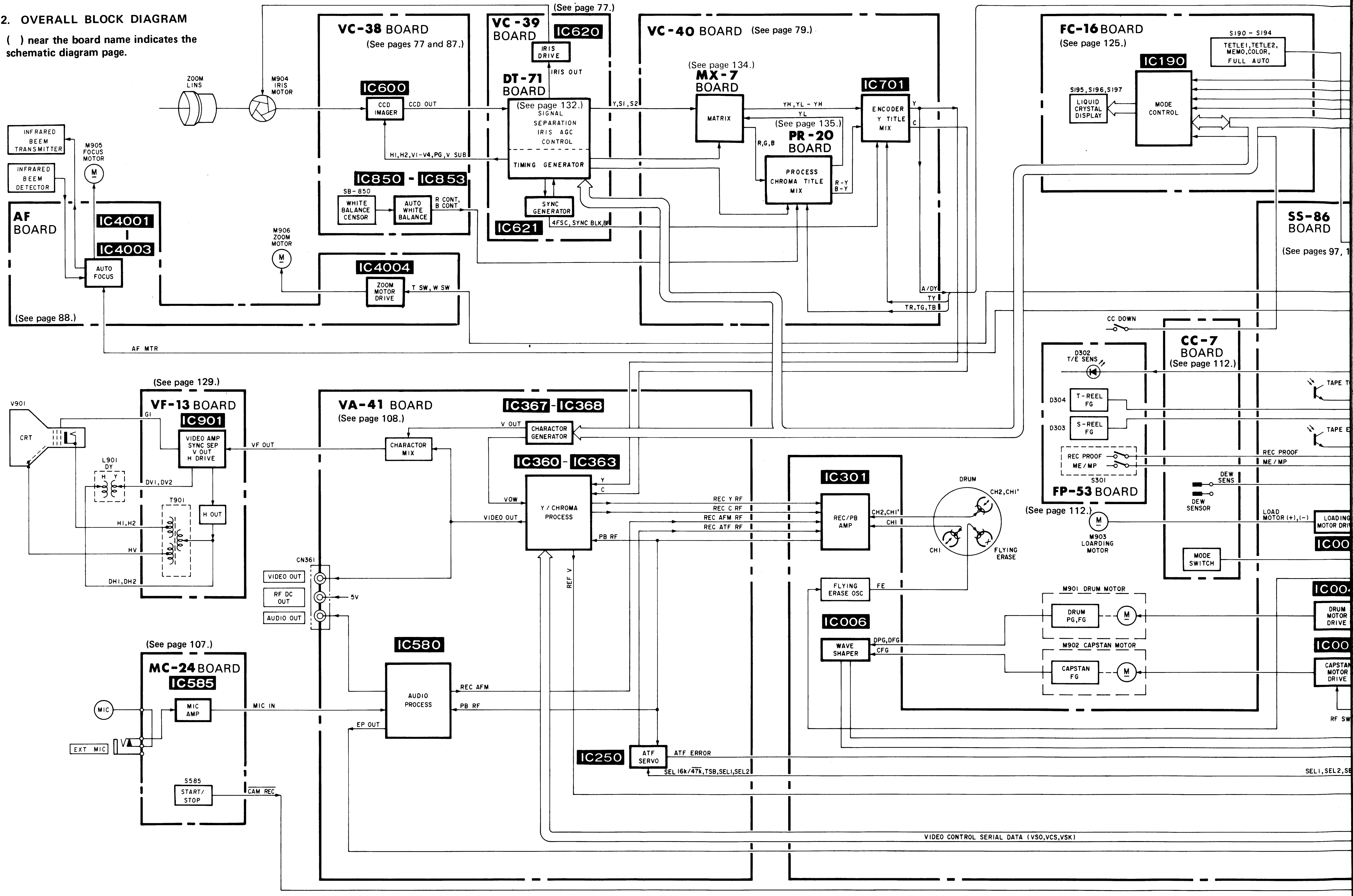
3-2. OVERALL BLOCK DIAGRAM

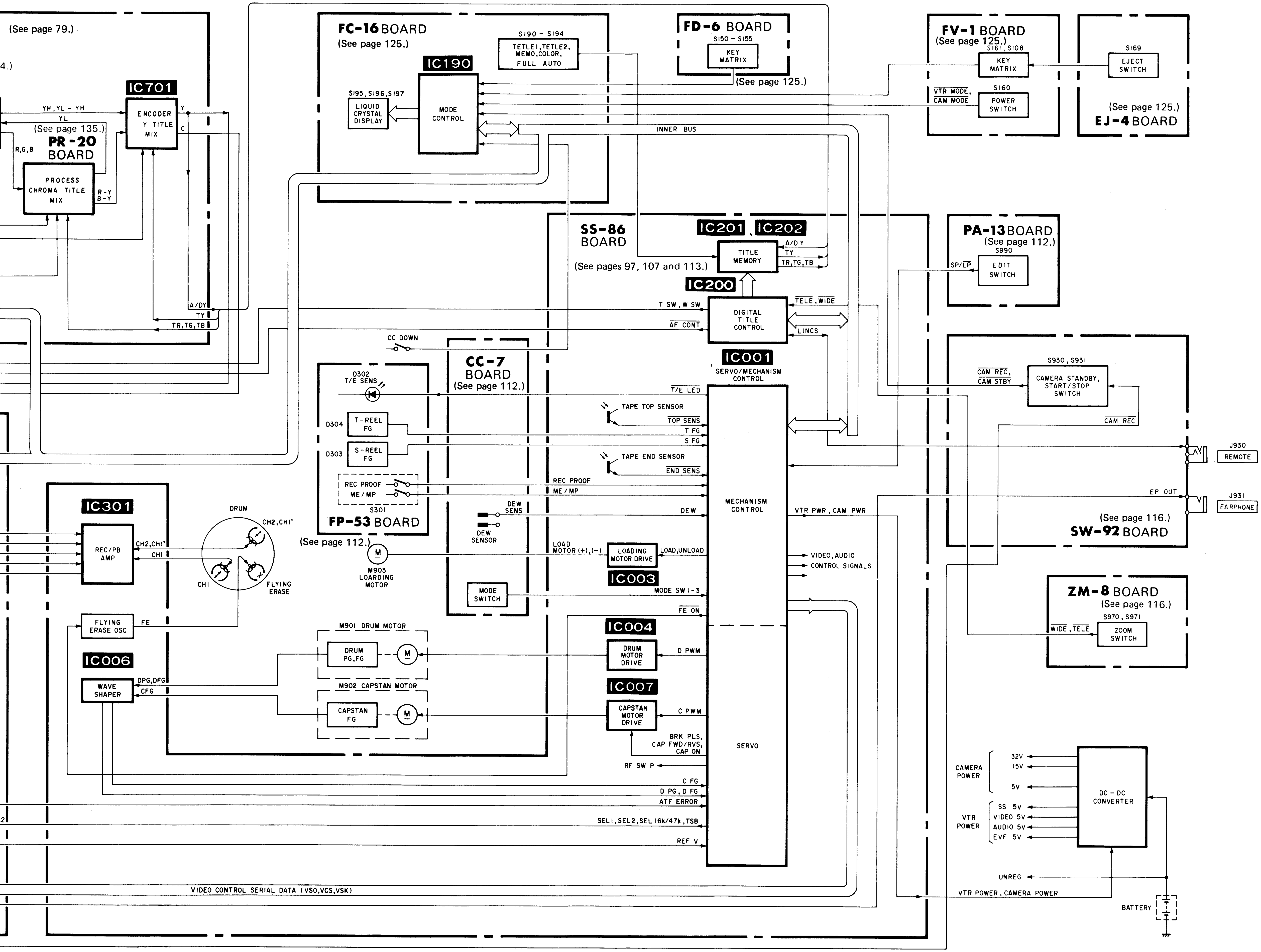
- ( ) near the board name indicates the schematic diagram page.


(See page 77.)
VC-38 BOARD
(See pages 77 and 87.)
VC-39 BOARD
IC620
IRIS DRIVE
IRIS OUT
DT-71 BOARD
(See page 132.)
SIGNAL SEPARATION IRIS AGC CONTROL
TIMING GENERATOR
SYNC GENERATOR
IC621
4FSC, SYNC BLK, BF
Y, S1, S2
VC-4
ZOOM LINS
M904 IRIS MOTOR
IC600
CCD IMAGER
CCD OUT
H1, H2, V1-V4, PG, V SUB
IC850 - IC853
SB-850
WHITE BALANCE CENSOR
AUTO WHITE BALANCE
R CONT, B CONT
INFRARED BEEM TRANSMITTER
INFRARED BEEM DETECTOR
M905 FOCUS MOTOR
M
AF BOARD
IC4001
IC4003
AUTO FOCUS
(See page 88.)
M906 ZOOM MOTOR
M
IC4004
ZOOM MOTOR DRIVE
T SW, W SW
AF MTR
(See page 129.)
V901
CRT
VF-13 BOARD
IC901
G1
VIDEO AMP SYNC SEP V OUT H DRIVE
VF OUT
L901 DY
H Y
DV1, DV2
T901
H OUT
H1, H2
HV
DH1, DH2
VA-41 BOARD
(See page 108.)
IC367-IC368
V OUT
CHARACTOR GENERATOR
CHARACTOR MIX
IC360-IC363
Y
C
VOW
Y / CHROMA PROCESS
VIDEO OUT
PB RF
REF V
CN361
VIDEO OUT
RF DC OUT
AUDIO OUT
5V
IC580
AUDIO PROCESS
REC AFM
PB RF
EP OUT
(See page 107.)
MC-24 BOARD
IC585
MIC
MIC AMP
MIC IN
EXT MIC
S585
START/ STOP
CAM REC
IC250
ATF SERVO
ATF
SEL 16

3-2. OVERALL BLOCK DIAGRAM

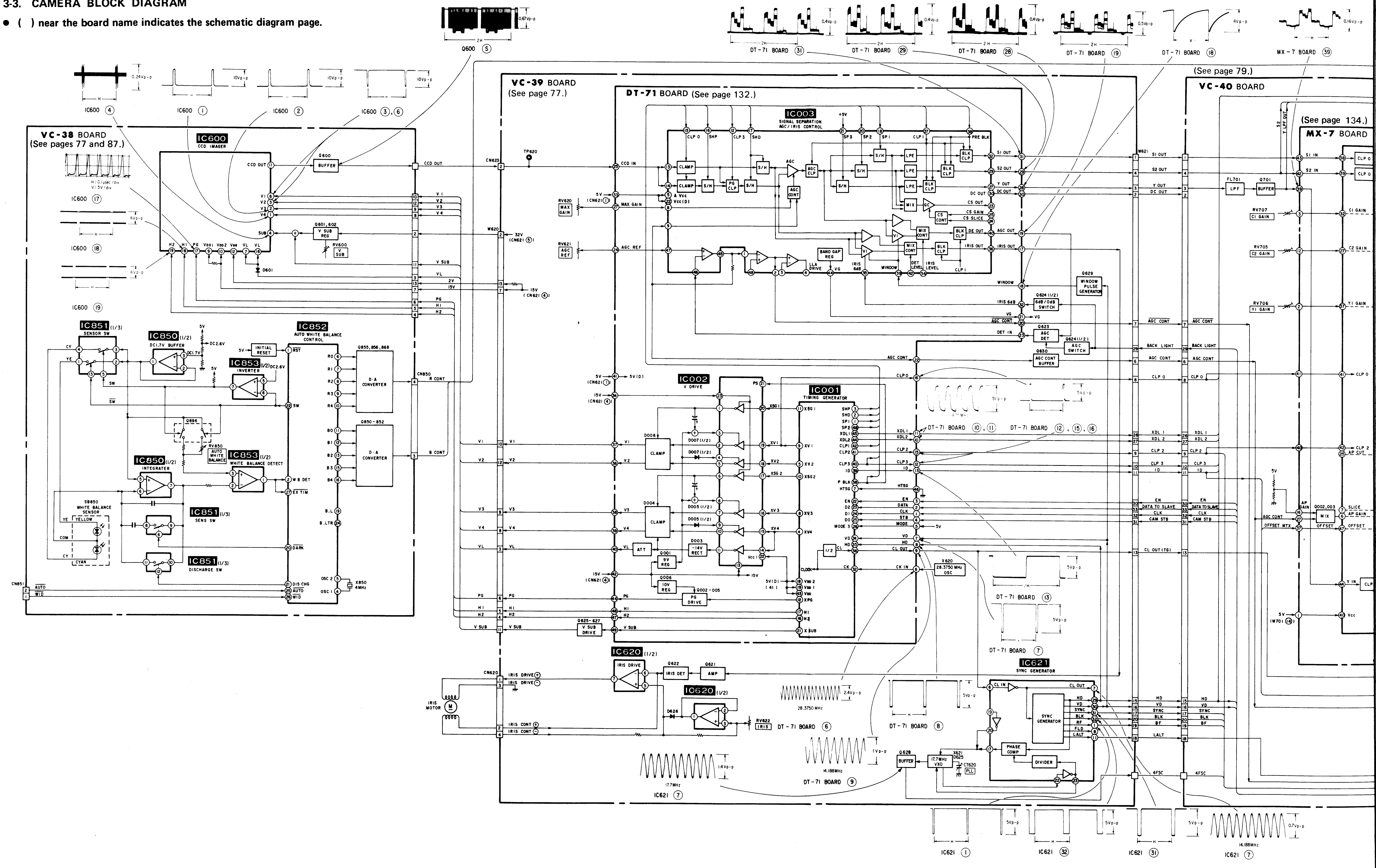
- ( ) near the board name indicates the schematic diagram page.

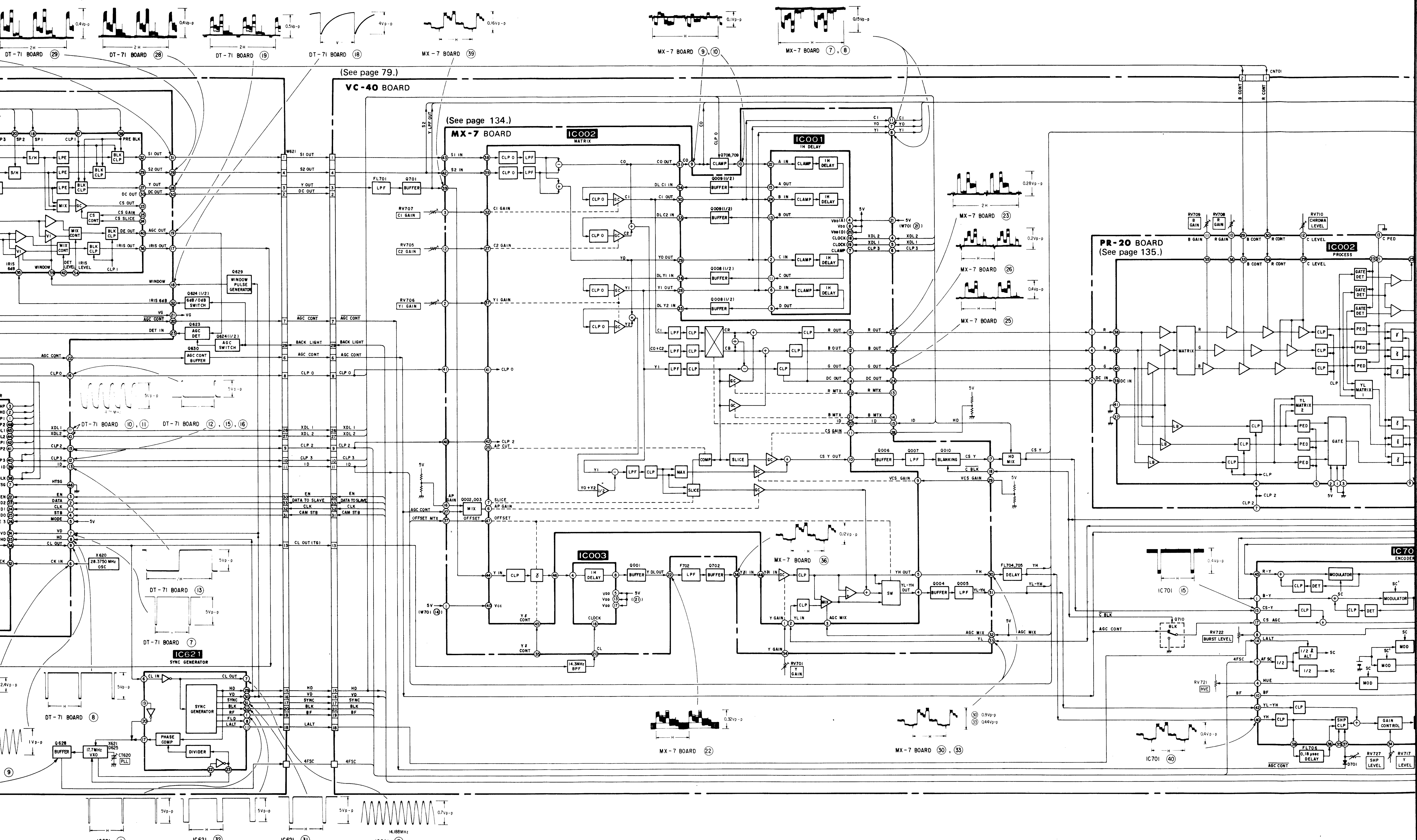

VC-38 BOARD (See pages 77 and 87.)
VC-39 BOARD
(See page 77.)
IC620
IRIS DRIVE
IRIS OUT
DT-71 BOARD
(See page 132.)
SIGNAL SEPARATION IRIS AGC CONTROL
TIMING GENERATOR
SYNC GENERATOR
IC621
4FSC, SYNC BLK,BF
VC-40 BOARD (See page 79.)
(See page 134.)
MX-7 BOARD
MATRIX
Y,SI,S2
YH,YL - YH
YL
R,G,B
(See page 135.)
PR-20 BOARD
PROCESS CHROMA TITLE MIX
R-Y
B-Y
IC701
ENCODER Y TITLE MIX
Y
C
A/DY
TY
TR,TG,TB
FC-16 BOARD
(See page 125.)
IC190
MODE CONTROL
S190 - S194
TETLE1,TETLE2, MEMO,COLOR, FULL AUTO
S195,S196,S197
LIQUID CRYSTAL DISPLAY
SS-86 BOARD
(See pages 97, 1
ZOOM LINS
M904 IRIS MOTOR
IC600
CCD IMAGER
CCD OUT
HI,H2,VI-V4,PG,V SUB
IC850 - IC853
SB-850
WHITE BALANCE CENSOR
AUTO WHITE BALANCE
R CONT, B CONT
INFRARED BEEM TRANSMITTER
INFRARED BEEM DETECTOR
M905 FOCUS MOTOR
AF BOARD
IC4001
IC4003
AUTO FOCUS
(See page 88.)
AF MTR
M906 ZOOM MOTOR
IC4004
ZOOM MOTOR DRIVE
T SW, W SW
CC DOWN
CC-7 BOARD
(See page 112.)
D302 T/E SENS
D304
T-REEL FG
D303
S-REEL FG
REC PROOF
ME/MP
S301
FP-53 BOARD
(See page 112.)
TAPE T
TAPE E
REC PROOF
ME / MP
DEW SENS
DEW SENSOR
LOAD MOTOR (+),(−)
LOADING MOTOR DRI
M903 LOARDING MOTOR
MODE SWITCH
ICOO
ICOO4
DRUM MOTOR DRIVE
ICOO
CAPSTAN MOTOR DRIVE
RF SW
M901 DRUM MOTOR
DRUM PG,FG
M902 CAPSTAN MOTOR
CAPSTAN FG
V901
CRT
(See page 129.)
VF-13 BOARD
IC901
G1
VIDEO AMP SYNC SEP V OUT H DRIVE
VF OUT
L901 DY
H
Y
DV1,DV2
T901
H OUT
H1,H2
HV
DH1,DH2
VA-41 BOARD
(See page 108.)
IC367 - IC368
V OUT
CHARACTER GENERATOR
CHARACTER MIX
IC360 - IC363
VOW
VIDEO OUT
Y / CHROMA PROCESS
Y
C
REC Y RF
REC C RF
REC AFM RF
REC ATF RF
PB RF
REF V
IC301
REC/PB AMP
CH2,CHI'
CHI
DRUM
CH2,CHI'
CHI
FLYING ERASE
FLYING ERASE OSC
FE
IC006
WAVE SHAPER
DPG,DFG
CFG
CN361
VIDEO OUT
RF DC OUT
AUDIO OUT
5V
IC580
AUDIO PROCESS
REC AFM
PB RF
EP OUT
(See page 107.)
MC-24 BOARD
IC585
MIC
MIC AMP
MIC IN
EXT MIC
S585
START/ STOP
CAM REC
IC250
ATF SERVO
ATF ERROR
SEL 16k/47k,TSB,SEL1,SEL2
SEL1,SEL2,SE
VIDEO CONTROL SERIAL DATA (VSO,VCS,VSK)

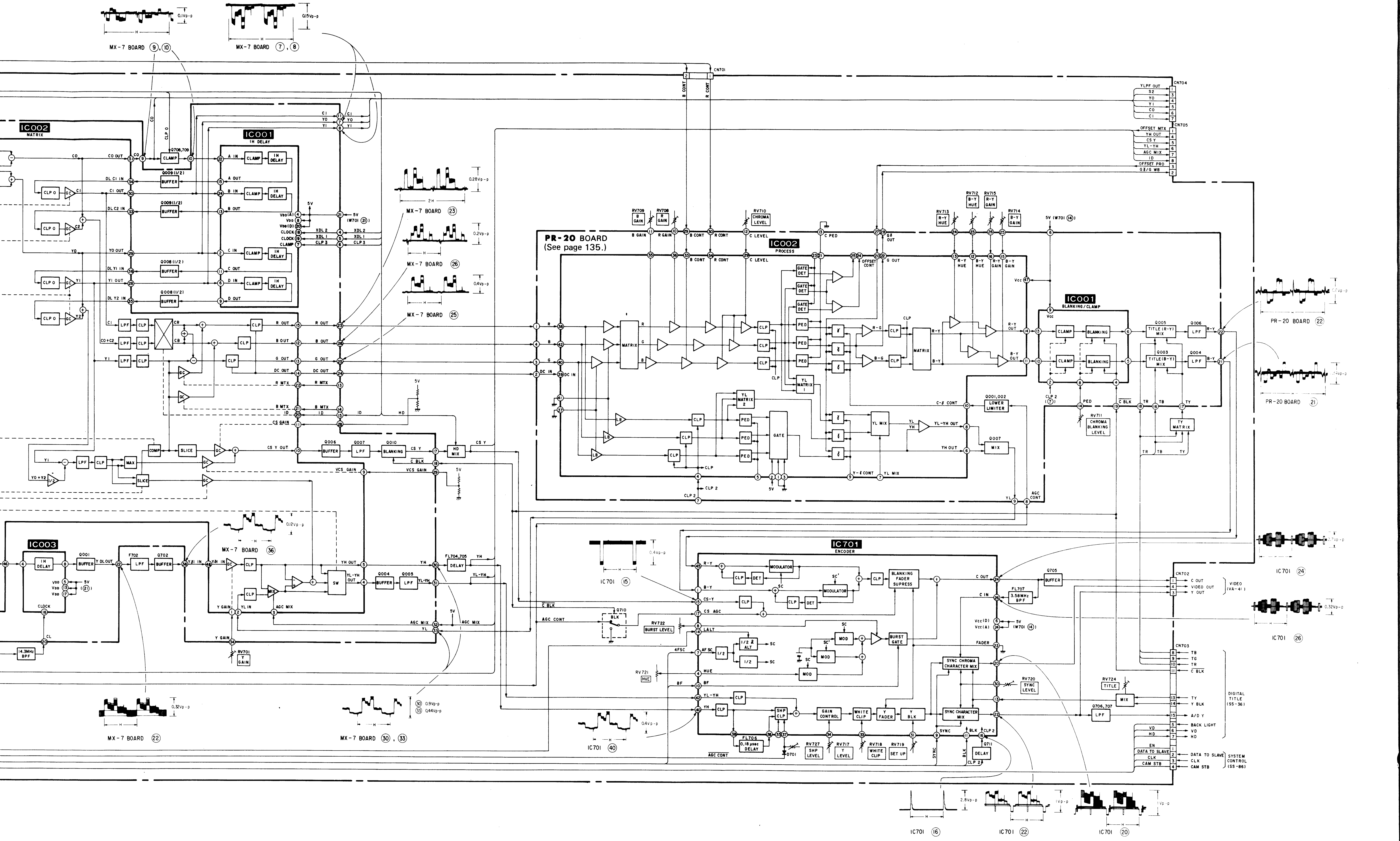

(See page 79.)
4.)
IC701
ENCODER Y TITLE MIX
YH, YL - YH
YL
(See page 135.)
PR-20 BOARD
R,G,B
PROCESS CHROMA TITLE MIX
R-Y
B-Y
Y
C
A/DY
TY
TR,TG,TB
FC-16 BOARD
(See page 125.)
S190 - S194
TETLE1, TETLE2, MEMO, COLOR, FULL AUTO
IC190
S195, S196, S197
LIQUID CRYSTAL DISPLAY
MODE CONTROL
INNER BUS
FD-6 BOARD
S150 - S155
KEY MATRIX
(See page 125.)
FV-1 BOARD
(See page 125.)
S161, S108
KEY MATRIX
S160
VTR MODE, CAM MODE
POWER SWITCH
S169
EJECT SWITCH
(See page 125.)
EJ-4 BOARD
SS-86 BOARD
(See pages 97, 107 and 113.)
IC201, IC202
TITLE MEMORY
A/D Y
TY
TR,TG,TB
IC200
DIGITAL TITLE CONTROL
T SW, W SW
AF CONT
TELE, WIDE
LINCS
IC001
SERVO/MECHANISM CONTROL
PA-13 BOARD
(See page 112.)
S990
SP/LP
EDIT SWITCH
CC DOWN
CC-7 BOARD
(See page 112.)
D302
T/E SENS
T/E LED
TAPE TOP SENSOR
TOP SENS
T FG
S FG
D304
T-REEL FG
D303
S-REEL FG
TAPE END SENSOR
END SENS
REC PROOF
ME/MP
S301
FP-53 BOARD
(See page 112.)
DEW SENS
DEW SENSOR
DEW
MECHANISM CONTROL
VTR PWR, CAM PWR
S930, S931
CAM REC, CAM STBY
CAMERA STANDBY, START/STOP SWITCH
CAM REC
J930
REMOTE
EP OUT
J931
EARPHONE
(See page 116.)
SW-92 BOARD
IC301
REC/PB AMP
CH2, CH1'
CH1
DRUM
CH2, CH1'
CH1
FLYING ERASE
M
M903 LOADING MOTOR
LOAD MOTOR (+), (-)
LOADING MOTOR DRIVE
LOAD, UNLOAD
IC003
VIDEO, AUDIO CONTROL SIGNALS
MODE SWITCH
MODE SW 1-3
FE ON
ZM-8 BOARD
(See page 116.)
S970, S971
WIDE, TELE
ZOOM SWITCH
FLYING ERASE OSC
FE
IC004
M901 DRUM MOTOR
DRUM PG, FG
M
DRUM MOTOR DRIVE
D PWM
IC006
WAVE SHAPER
DPG, DFG
CFG
IC007
M902 CAPSTAN MOTOR
CAPSTAN FG
M
CAPSTAN MOTOR DRIVE
C PWM
BRK PLS, CAP FWD/RVS, CAP ON
SERVO
RF SW P
C FG
D PG, D FG
ATF ERROR
SEL1, SEL2, SEL 16k/47k, TSB
REF V
VIDEO CONTROL SERIAL DATA (VSO, VCS, VSK)
CAMERA POWER
32V
15V
5V
DC - DC CONVERTER
VTR POWER
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
UNREG
VTR POWER, CAMERA POWER
BATTERY

3-3. CAMERA BLOCK DIAGRAM

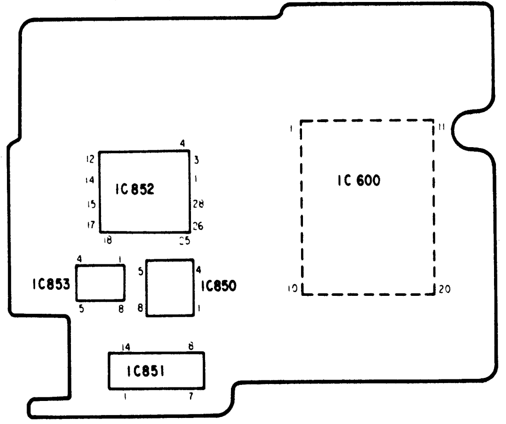
- ( ) near the board name indicates the schematic diagram page.

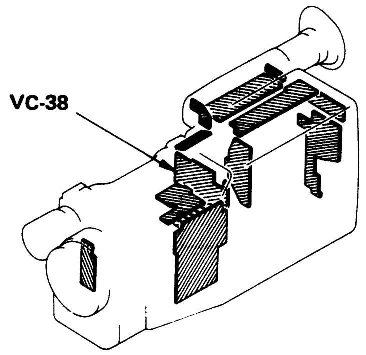

VC-38 BOARD (See pages 77 and 87.)
VC-39 BOARD (See page 77.)
DT-71 BOARD (See page 132.)
VC-40 BOARD (See page 79.)
MX-7 BOARD (See page 134.)
IC600 CCD IMAGER
Q600 BUFFER
CCD OUT
Q601, 602 V SUB REG
RV600 V SUB
IC851 (1/3) SENSOR SW
IC850 (1/2) DC1.7V BUFFER
IC852 AUTO WHITE BALANCE CONTROL
IC853 (1/2) INVERTER
IC850 (1/2) INTEGRATER
IC853 (1/2) WHITE BALANCE DETECT
IC851 (1/3) SENS SW
IC851 (1/3) DISCHARGE SW
S8850 WHITE BALANCE SENSOR
YELLOW
CYAN
Q896
RV850 AUTO WHITE BALANCE
INITIAL RESET
Q855, 856, 868 D-A CONVERTER
Q850-852 D-A CONVERTER
X850 4MHz
R CONT
B CONT
W B DET
EX TIM
DIS CHG
AUTO
WID
IC003 SIGNAL SEPARATION AGC/IRIS CONTROL
CLAMP
S/H
PG CLP
AGC
AGC CLP
AGC CONT
LPE
BLK CLP
MIX
CS CONT
MIX CONT
BAND GAP REG
LLA DRIVE
IRIS 6dB
WINDOW
DET LEVEL
IRIS LEVEL
S1 OUT
S2 OUT
Y OUT
DC OUT
CS GAIN
CS SLICE
AGC OUT
IRIS OUT
Q629 WINDOW PULSE GENERATOR
Q624 (1/2) 6dB/0dB SWITCH
Q623 AGC DET
Q624 (1/2) AGC SWITCH
Q630 AGC CONT BUFFER
RV620 MAX GAIN
RV621 AGC REF
TP620
IC002 V DRIVE
IC001 TIMING GENERATOR
D006 CLAMP
D004 CLAMP
D007 (1/2)
D005 (1/2)
D003 -14V RECT
ATT
Q001 9V REG
Q006 10V REG
Q002-005 PG DRIVE
Q625-627 V SUB DRIVE
X620 28.3750 MHz OSC
IC620 (1/2) IRIS DRIVE
Q622 IRIS DET
Q621 AMP
IC620 (1/2)
D626
RV622 IRIS
IRIS MOTOR
IRIS DRIVE⊕
IRIS DRIVE⊖
IRIS CONT⊕
IRIS CONT⊖
IC621 SYNC GENERATOR
PHASE COMP
DIVIDER
Q628 BUFFER
17.7MHz VXO
X621 D625
CT620 PLL
FL701 LPF
Q701 BUFFER
RV707 C1 GAIN
RV705 C2 GAIN
RV706 Y1 GAIN
Q002, 003 MIX
AGC CONT
BACK LIGHT
CLP 0
XDL 1
XDL 2
CLP 2
CLP 3
ID
EN
DATA TO SLAVE
CLK
CAM STB
CL OUT (TG)
HD
VD
SYNC
BLK
BF
LALT
4FSC
Q600 (S)
0.67Vp-p
IC600 (4) 0.24Vp-p
IC600 (1) 10Vp-p
IC600 (2) 10Vp-p
IC600 (3), (6) 10Vp-p
IC600 (17) H: 0.1μsec/div V: 5V/div
IC600 (18) 6Vp-p
IC600 (19) 6Vp-p
DT-71 BOARD (31) 0.4Vp-p
DT-71 BOARD (29) 0.4Vp-p
DT-71 BOARD (28) 0.4Vp-p
DT-71 BOARD (19) 0.5Vp-p
DT-71 BOARD (18) 4Vp-p
MX-7 BOARD (39) 0.16Vp-p
DT-71 BOARD (10), (11) 5Vp-p
DT-71 BOARD (12), (15), (16) 5Vp-p
DT-71 BOARD (13) 5Vp-p
DT-71 BOARD (7) 5Vp-p
DT-71 BOARD (6) 2.4Vp-p 28.3750MHz
DT-71 BOARD (8) 5Vp-p
DT-71 BOARD (9) 1Vp-p 14.188MHz
IC621 (7) 1.4Vp-p 17.7MHz
IC621 (1) 5Vp-p
IC621 (32) 5Vp-p
IC621 (31) 5Vp-p
IC621 (7) 0.7Vp-p 14.188MHz


DT-71 BOARD ㉙
DT-71 BOARD ㉘
DT-71 BOARD ⑲
DT-71 BOARD ⑱
MX-7 BOARD ㊴
MX-7 BOARD ⑨, ⑩
MX-7 BOARD ⑦, ⑧
(See page 79.)
VC-40 BOARD
(See page 134.)
MX-7 BOARD
IC002
MATRIX
IC001
1H DELAY
CN701
B CONT
R CONT
MX-7 BOARD ㉓
MX-7 BOARD ㉖
MX-7 BOARD ㉕
PR-20 BOARD
(See page 135.)
IC002
PROCESS
RV709 B GAIN
RV708 R GAIN
RV710 CHROMA LEVEL
S/H
LPF
BLK CLP
MIX
GC
WINDOW PULSE GENERATOR
Q629
Q624 (1/2)
6dB/0dB SWITCH
Q623
AGC DET
Q624 (1/2)
AGC SWITCH
Q630
AGC CONT BUFFER
W621
FL701
LPF
Q701
BUFFER
RV707 C1 GAIN
RV705 C2 GAIN
RV706 Y1 GAIN
CLP 0
CLAMP
Q708,709
1H DELAY
Q009 (1/2) BUFFER
Q008 (1/2) BUFFER
MATRIX
GATE DET
PED
YL MATRIX 1
YL MATRIX 2
GATE
DT-71 BOARD ⑩, ⑪
DT-71 BOARD ⑫, ⑮, ⑯
COMP
SLICE
MAX
Q006 BUFFER
Q007 LPF
Q010 BLANKING
HD MIX
Q002,003 MIX
IC003
1H DELAY
Q001 BUFFER
F702 LPF
Q702 BUFFER
MX-7 BOARD ㊱
SW
YL-YH OUT
Q004 BUFFER
Q005 LPF
FL704,705 DELAY
IC701 ⑮
IC70
ENCODER
MODULATOR
DET
Q710 BLK
RV722 BURST LEVEL
RV721 HUE
MOD
SHP CLP
GAIN CONTROL
FL706 0.18 μsec DELAY
RV727 SHP LEVEL
RV717 Y LEVEL
14.3MHz BPF
RV701 Y GAIN
X620 28.3750 MHz OSC
DT-71 BOARD ⑬
DT-71 BOARD ⑦
IC621
SYNC GENERATOR
SYNC GENERATOR
PHASE COMP
DIVIDER
DT-71 BOARD ⑧
Q628 BUFFER
X621 D625 17.7MHz VXO
CT620 PLL
MX-7 BOARD ㉒
MX-7 BOARD ㉚, ㉝
IC701 ㊵
IC621 ①
IC621 ㉜
IC621 ㉛
IC621 ⑦
14.188MHz

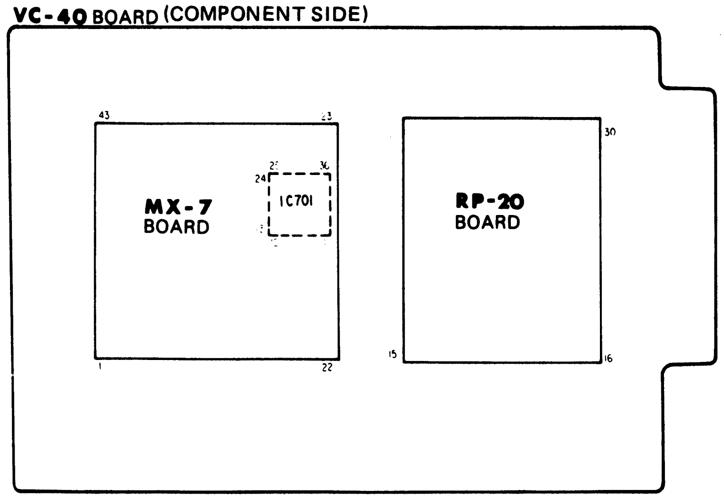

MX-7 BOARD ⑨, ⑩
0.1Vp-p
MX-7 BOARD ⑦, ⑧
0.15Vp-p
IC002
MATRIX
IC001
1H DELAY
CLAMP
1H DELAY
BUFFER
Q708,709
Q009(1/2)
Q008(1/2)
CO OUT
CI OUT
DLC1 IN
DLC2 IN
YO OUT
DLY1 IN
YI OUT
DLY2 IN
A IN
A OUT
B IN
B OUT
C IN
C OUT
D IN
D OUT
XDL 2
XDL 1
CLP 3
CLAMP
CLOCK
5V
(W701 ㉑)
CLP O
GC
LPF
CLP
R OUT
B OUT
G OUT
DC OUT
R MTX
B MTX
ID
HD
CS GAIN
CS Y OUT
COMP
SLICE
MAX
Q006
Q007
Q010
BUFFER
BLANKING
CS Y
C BLK
HD MIX
VCS GAIN
CN701
B CONT
R CONT
CN704
YLPF OUT
S2
YO
YI
CO
CI
CN705
OFFSET MTX
YH OUT
CS Y
YL-YH
AGC MIX
ID
OFFSET PRO
GB/G WB
0.28Vp-p
MX-7 BOARD ㉓
0.2Vp-p
MX-7 BOARD ㉖
0.4Vp-p
MX-7 BOARD ㉕
PR-20 BOARD
(See page 135.)
RV709
B GAIN
RV708
R GAIN
RV710
CHROMA LEVEL
C LEVEL
C PED
G8 OUT
RV713
R-Y HUE
RV712
B-Y HUE
RV715
R-Y GAIN
RV714
B-Y GAIN
5V (W701 ⑭)
IC002
PROCESS
GATE DET
PED
MATRIX
YL MATRIX 1
YL MATRIX 2
LB
GATE
YL MIX
YL-YH OUT
YH OUT
C-γ CONT
Y-γ CONT
OFFSET CONT
G OUT
R-Y OUT
B-Y OUT
Vcc
IC001
BLANKING/CLAMP
CLAMP
BLANKING
Q005
TITLE (R-Y) MIX
Q003
TITLE (B-Y) MIX
Q006
Q004
LPF
R-Y
B-Y
PR-20 BOARD ㉒
PR-20 BOARD ㉑
Q001,002
LOWER LIMITER
Q007
MIX
RV711
CHROMA BLANKING LEVEL
PED
C BLK
TR
TB
TY
TY MATRIX
CLP 2
AGC CONT
IC003
1H DELAY
Q001
BUFFER
Y DL OUT
F702
LPF
Q702
BUFFER
Y(3) IN
MX-7 BOARD ㊱
0.12Vp-p
YH OUT
SW
YL-YH OUT
Q004
Q005
BUFFER
LPF
YL-YH
YH
FL704,705
DELAY
Y GAIN
YL IN
AGC MIX
YL
RV701
Y GAIN
14.3MHz BPF
CLOCK
CL
VDD
MX-7 BOARD ㉒
0.32Vp-p
MX-7 BOARD ㉚, ㉝
㉚ 0.9Vp-p
㉝ 0.44Vp-p
IC701 ⑮
0.4Vp-p
IC701
ENCODER
R-Y
B-Y
CS-Y
CS AGC
LALT
AF SC
HUE
BF
YL-YH
YH
MODULATOR
DET
SC
BLANKING FADER SUPRESS
C OUT
C IN
Q705
BUFFER
FL707
3.58MHz BPF
1/2
1/2 & ALT
MOD
BURST GATE
Vcc(D)
Vcc(A)
FADER
SYNC CHROMA CHARACTER MIX
SYNC CHARACTER MIX
RV720
SYNC LEVEL
RV724
TITLE
Q706,707
SHP CLP
GAIN CONTROL
WHITE CLIP
Y FADER
Y BLK
SYNC
BLK
CLP 2
Q711
DELAY
FL706
0.18µsec DELAY
RV727
SHP LEVEL
RV717
Y LEVEL
RV718
WHITE CLIP
RV719
SET UP
D701
AGC CONT
RV721
HUE
RV722
BURST LEVEL
Q710
BLK
4FSC
IC701 ㊵
0.4Vp-p
IC701 ㉔
IC701 ㉖
0.32Vp-p
CN702
C OUT
VIDEO OUT
Y OUT
VIDEO (VA-41)
CN703
TB
TG
TR
C BLK
TY
Y BLK
A/D Y
BACK LIGHT
VD
HD
DIGITAL TITLE (SS-36)
EN
DATA TO SLAVE
CLK
CAM STB
SYSTEM CONTROL (SS-86)
2.8Vp-p
1Vp-p
IC701 ⑯
IC701 ㉒
IC701 ⑳

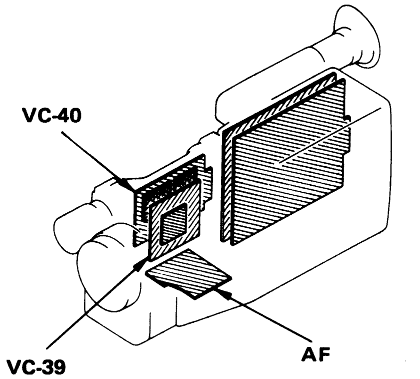
VC-38 BOARD (CONDUCTOR SIDE)


IC852
IC600
IC853
IC850
IC851

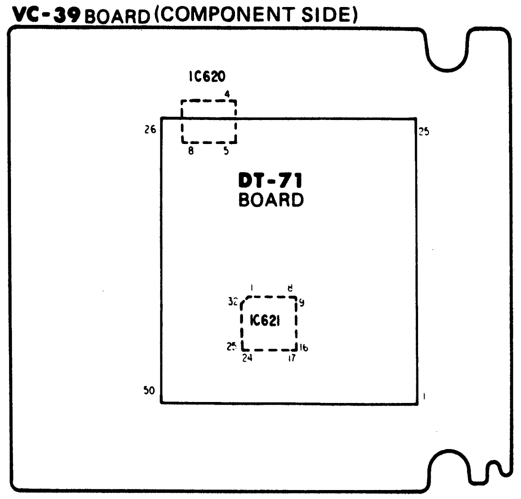


VC-40 BOARD (COMPONENT SIDE)


MX-7 BOARD
IC701
RP-20 BOARD


VC-40
VC-39
AF

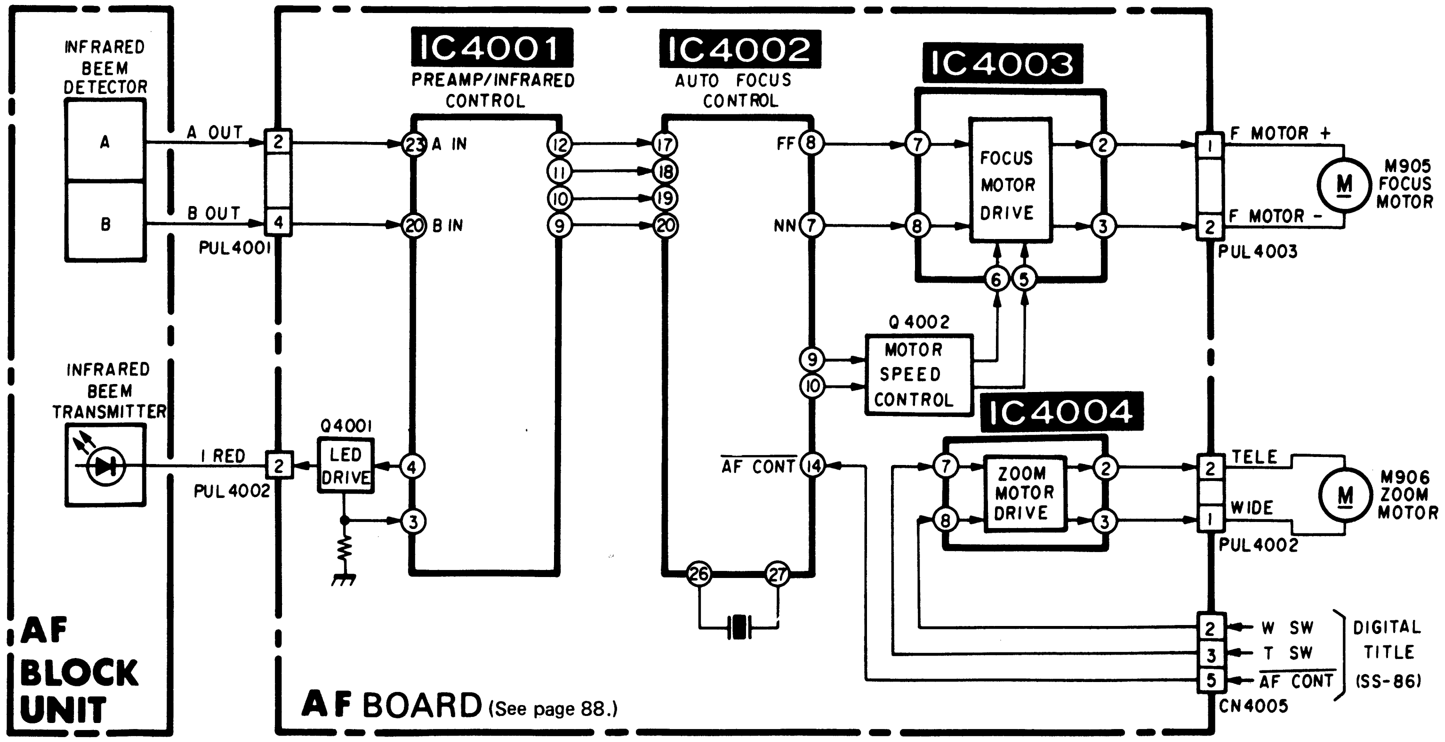
VC-39 BOARD (COMPONENT SIDE)


IC620
DT-71 BOARD
IC621

- **Components on the rear side indicated by "- - -" line.**

3-4. AUTO FOCUS BLOCK DIAGRAM

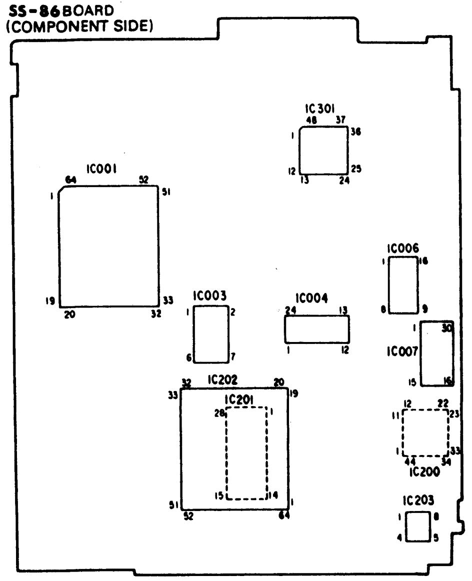
- **( ) near the board name indicates the schematic diagram page.**


INFRARED BEEM DETECTOR
A
B
A OUT
B OUT
PUL4001
INFRARED BEEM TRANSMITTER
I RED
PUL4002
Q4001 LED DRIVE
IC4001 PREAMP/INFRARED CONTROL
A IN
B IN
IC4002 AUTO FOCUS CONTROL
FF
NN
AF CONT
IC4003
FOCUS MOTOR DRIVE
Q4002 MOTOR SPEED CONTROL
IC4004
ZOOM MOTOR DRIVE
F MOTOR +
F MOTOR −
PUL4003
M905 FOCUS MOTOR
TELE
WIDE
PUL4002
M906 ZOOM MOTOR
W SW
T SW
AF CONT
CN4005
DIGITAL TITLE (SS-86)
AF BLOCK UNIT
AF BOARD (See page 88.)

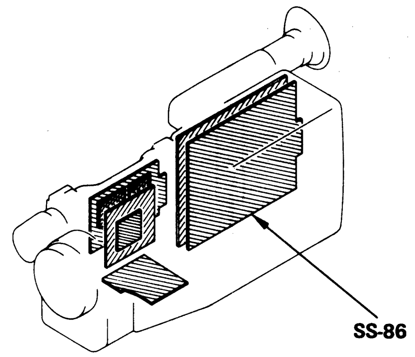
3-5. DIGITAL TITLER BLOCK DIAGRAM

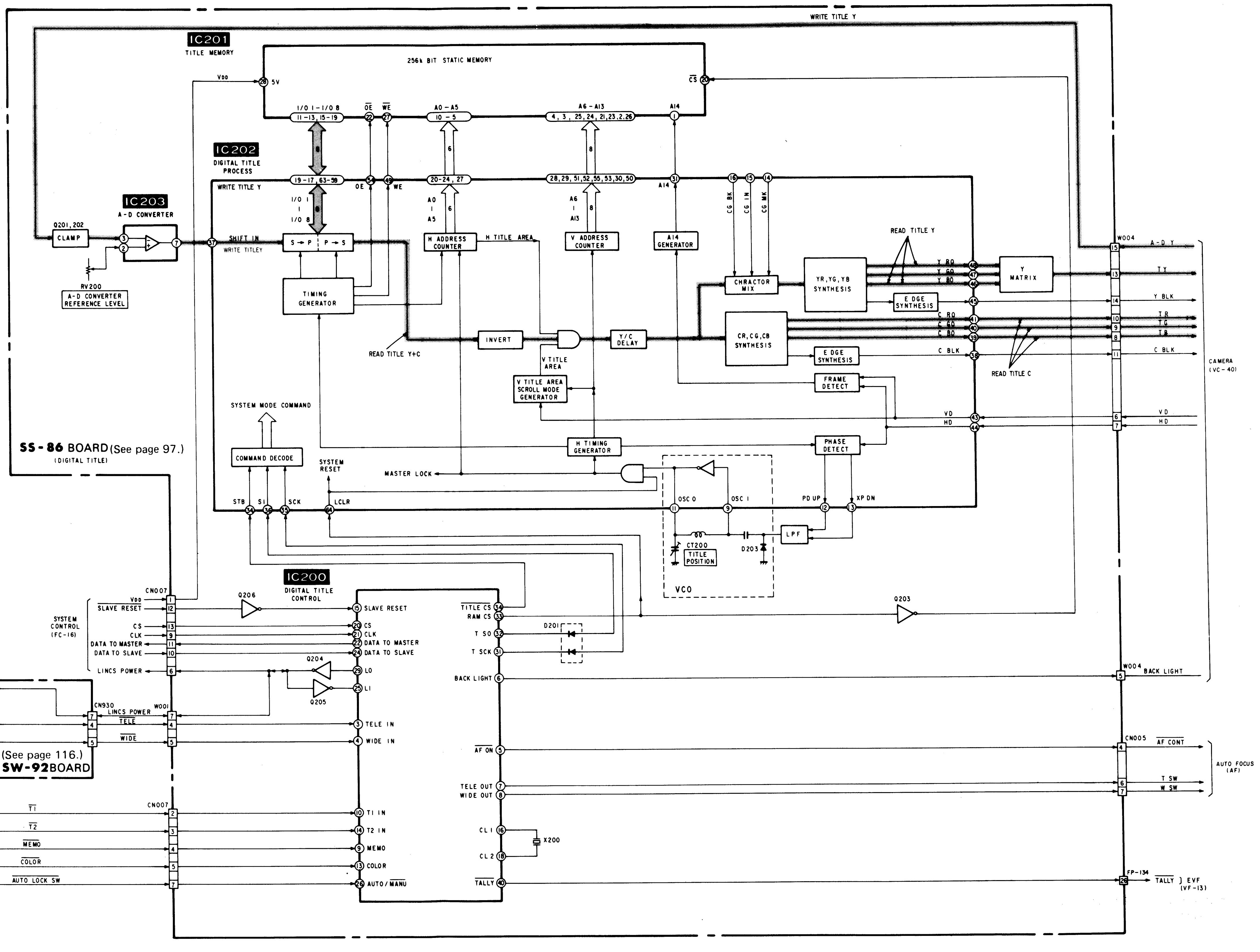
- ( ) near the board name indicates the schematic diagram page.

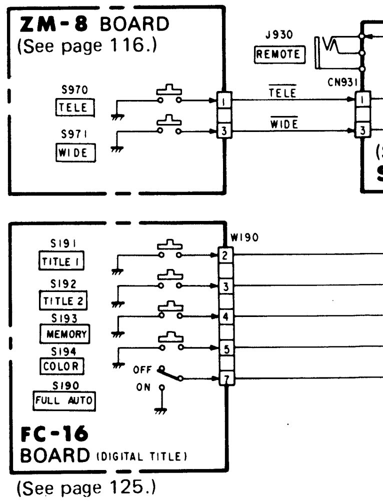
SS-86 BOARD
(COMPONENT SIDE)


IC301
IC001
IC003
IC004
IC006
IC007
IC202
IC201
IC200
IC203

- Components on the rear side indicated by "- - -" line.

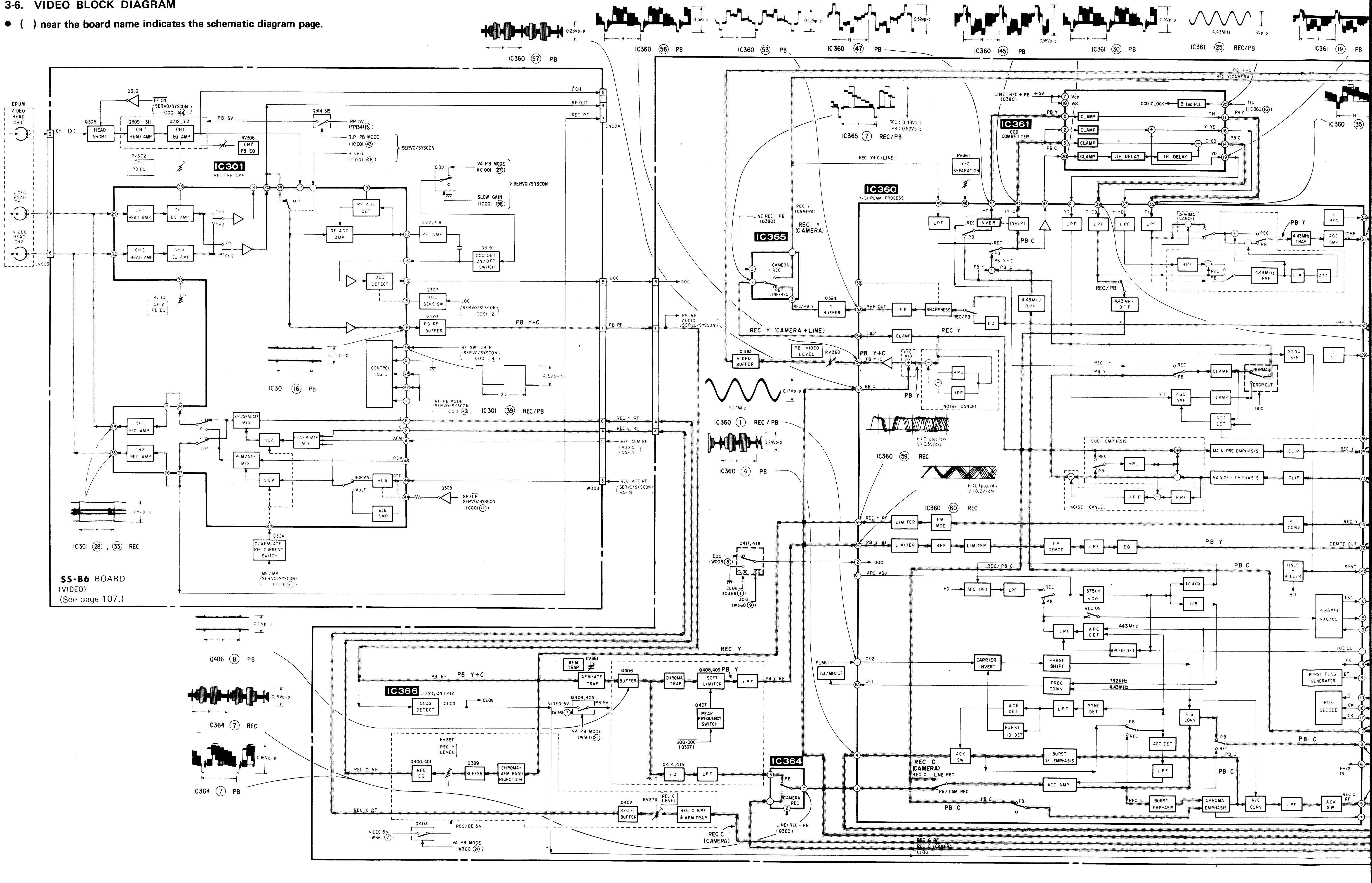



WRITE TITLE Y
IC201
TITLE MEMORY
256k BIT STATIC MEMORY
VDD
5V
CS
I/O 1 - I/O 8
11-13, 15-19
OE
WE
A0 - A5
10 - 5
A6 - A13
4, 3, 25, 24, 21, 23, 2, 26
A14
IC202
DIGITAL TITLE PROCESS
WRITE TITLE Y
19-17, 63-59
20-24, 27
28, 29, 51, 52, 55, 53, 30, 50
I/O 1
I/O 8
A0
A5
A6
A13
A14
CG BK
CG IN
CG MK
IC203
A-D CONVERTER
Q201, 202
CLAMP
RV200
A-D CONVERTER REFERENCE LEVEL
SHIFT IN
WRITE TITLEY
S→P
P→S
H ADDRESS COUNTER
H TITLE AREA
V ADDRESS COUNTER
A14 GENERATOR
READ TITLE Y
CHRACTOR MIX
YR, YG, YB SYNTHESIS
Y MATRIX
Y RO
Y GO
Y BO
EDGE SYNTHESIS
TIMING GENERATOR
READ TITLE Y+C
INVERT
Y/C DELAY
V TITLE AREA
V TITLE AREA SCROLL MODE GENERATOR
CR, CG, CB SYNTHESIS
C RO
C GO
C BO
C BLK
EDGE SYNTHESIS
READ TITLE C
FRAME DETECT
VD
HD
SYSTEM MODE COMMAND
COMMAND DECODE
SYSTEM RESET
MASTER LOCK
H TIMING GENERATOR
PHASE DETECT
OSC O
OSC I
PD UP
XP DN
CT200
TITLE POSITION
D203
LPF
VCO
STB
SI
SCK
LCLR
SS-86 BOARD (See page 97.)
(DIGITAL TITLE)
W004
A-D Y
T Y
Y BLK
T R
T G
T B
C BLK
CAMERA (VC-40)
VD
HD
IC200
DIGITAL TITLE CONTROL
Q206
CN007
VDD
SLAVE RESET
CS
CLK
DATA TO MASTER
DATA TO SLAVE
LINCS POWER
SYSTEM CONTROL (FC-16)
SLAVE RESET
CS
CLK
DATA TO MASTER
DATA TO SLAVE
Q204
LO
LI
Q205
TITLE CS
RAM CS
T SO
T SCK
D201
Q203
BACK LIGHT
W004
BACK LIGHT
J930
REMOTE
CN931
CN930
W001
LINCS POWER
TELE
WIDE
(See page 116.)
SW-92 BOARD
TELE IN
WIDE IN
AF ON
CN005
AF CONT
AUTO FOCUS (AF)
TELE OUT
WIDE OUT
T SW
W SW
T1
T2
MEMO
COLOR
AUTO LOCK SW
CN007
T1 IN
T2 IN
MEMO
COLOR
AUTO/MANU
CL1
CL2
X200
TALLY
FP-134
TALLY } EVF (VF-13)

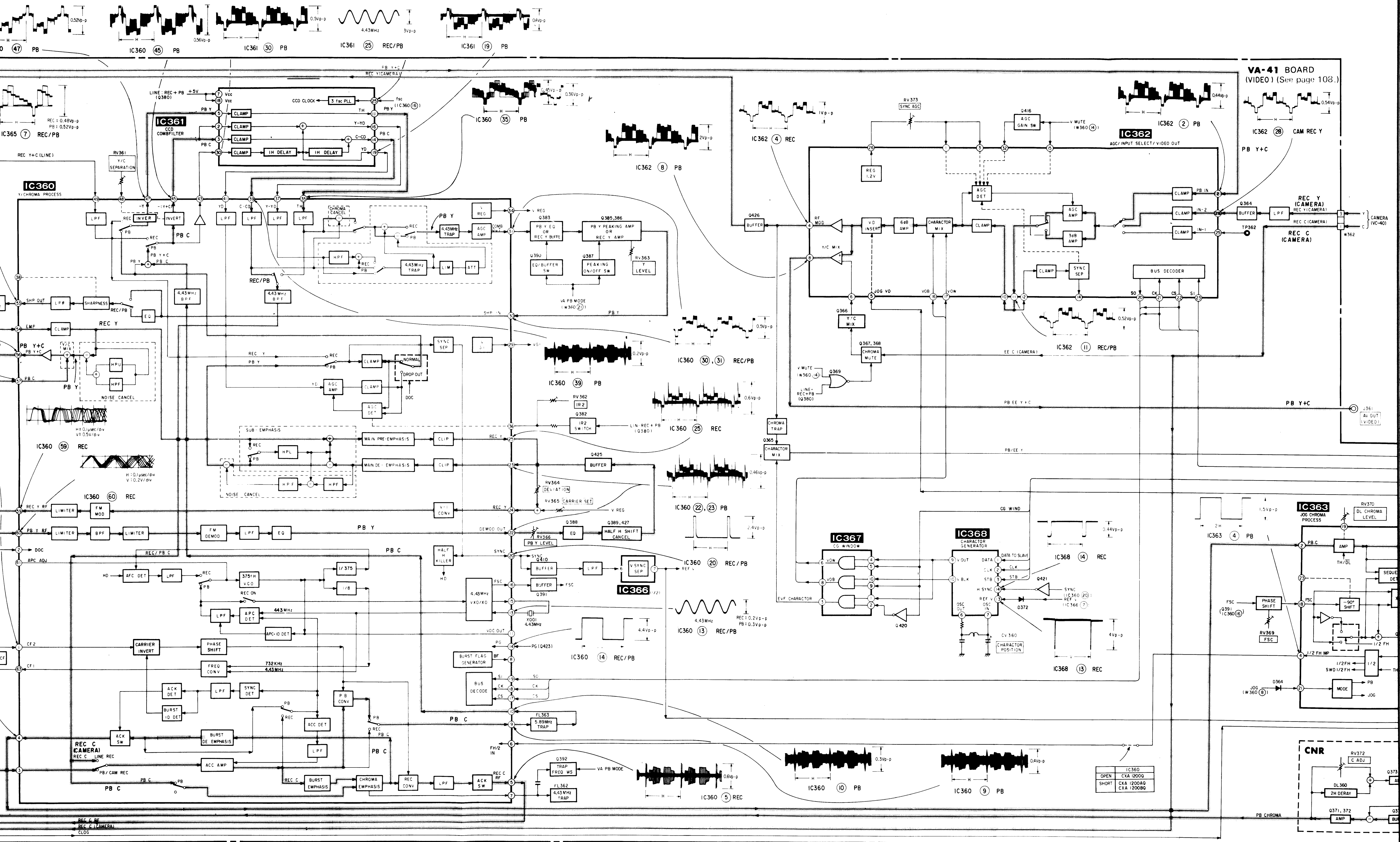

ZM-8 BOARD
(See page 116.)
S970
TELE
S971
WIDE
W190
S191
TITLE 1
S192
TITLE 2
S193
MEMORY
S194
COLOR
S190
FULL AUTO
OFF
ON
FC-16
BOARD (DIGITAL TITLE)
(See page 125.)

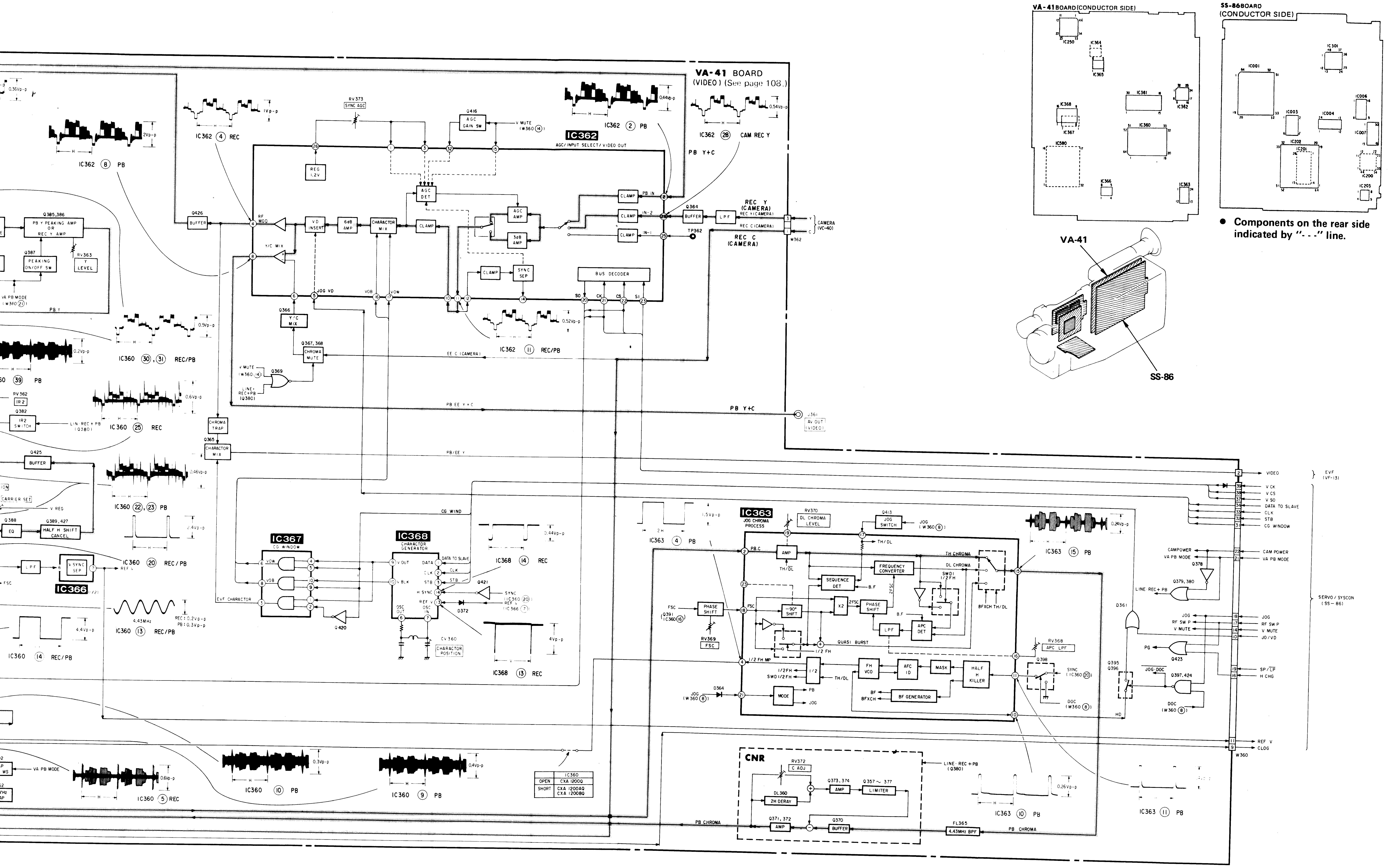
3-6. VIDEO BLOCK DIAGRAM

- ( ) near the board name indicates the schematic diagram page.



IC360 ⑤⑦ PB
IC360 ⑤⑥ PB
IC360 ⑤③ PB
IC360 ④⑦ PB
IC360 ④⑤ PB
IC361 ③⓪ PB
IC361 ②⑤ REC/PB
IC361 ⑲ PB
DRUM VIDEO HEAD CH1'
VIDEO HEAD CH1
VIDEO HEAD CH2
CN003
HEAD SHORT
CH1' HEAD AMP
CH1' EQ AMP
CH1' PB EQ
IC301 REC/PB AMP
CH1 HEAD AMP
CH1 EQ AMP
CH2 HEAD AMP
CH2 EQ AMP
RF AGC DET
RF AGC AMP
RF AMP
DOC DETECT
DOC SENS SW
PB RF BUFFER
DOC DET ON/OFF SWITCH
CONTROL LOGIC
SERVO/SYSCON
PB Y+C
IC301 ⑯ PB
IC301 ③⑨ REC/PB
CH1 REC AMP
CH2 REC AMP
Y/C/AFM/ATF MIX
C/AFM/ATF MIX
PCM/ATF MIX
VCA
6dB AMP
C/AFM/ATF REC CURRENT SWITCH
SP/LP
IC301 ㉘, ㉝ REC
SS-86 BOARD (VIDEO) (See page 107.)
CN004
W003
DOC
PB RF
REC Y RF
REC C RF
REC AFM RF
REC ATF RF
IC365 ⑦ REC/PB
IC365
CAMERA REC
PB+LINE+REC
Y BUFFER
REC Y (CAMERA + LINE)
REC Y (CAMERA)
LINE REC + PB (Q380)
IC361 CCD COMBFILTER
CLAMP
1H DELAY
3 fsc PLL
CCD CLOCK
IC360 Y/CHROMA PROCESS
Y/C SEPARATION
LPF
INVERT
SHARPNESS
EQ
4.43MHz BPF
REC/PB
CHROMA CANCEL
4.43MHz TRAP
AGC AMP
HPF
LIM
ATT
SYNC SEP
VIDEO BUFFER
PB VIDEO LEVEL
Y/C MIX
HPL
NOISE CANCEL
NORMAL
DROP OUT
AGC DET
SUB-EMPHASIS
MAIN PRE-EMPHASIS
MAIN DE-EMPHASIS
CLIP
V-I CONV
IC360 ① REC/PB
IC360 ④ PB
IC360 ⑤⑨ REC
IC360 ⑥⓪ REC
LIMITER
FM MOD
BPF
FM DEMOD
PB Y
PB C
HALF H KILLER
AFC DET
375fH VCO
1/375
1/8
APC DET
APC-ID DET
4.43MHz VXO/XO
CARRIER INVERT
PHASE SHIFT
FREQ CONV
ACK DET
SYNC DET
BURST ID DET
P B CONV
BURST FLAG GENERATOR
BUS DECODE
ACK SW
BURST DE EMPHASIS
ACC DET
ACC AMP
BURST EMPHASIS
CHROMA EMPHASIS
REC CONV
FL361 5.17MHz CF
Q406 ⑧ PB
IC364 ⑦ REC
IC364 ⑦ PB
IC366
CLOG DETECT
AFM TRAP
AFM/ATF TRAP
BUFFER
CHROMA TRAP
SOFT LIMITER
PEAK FREQUENCY SWITCH
REC EQ
REC Y LEVEL
CHROMA/AFM BAND REJECTION
REC C BUFFER
REC C LEVEL
REC C BPF & AFM TRAP
IC364
REC C (CAMERA)
REC Y
CLOG


VA-41 BOARD
(VIDEO) (See page 108.)
IC360
Y/CHROMA PROCESS
IC361
CCD COMBFILTER
IC362
AGC/INPUT SELECT/VIDEO OUT
IC363
JOG CHROMA PROCESS
IC366
IC367
CG WINDOW
IC368
CHARACTOR GENERATOR
CNR
IC360 (47) PB
IC360 (45) PB
IC361 (30) PB
IC361 (25) REC/PB
IC361 (19) PB
4.43MHz
3Vp-p
0.52Vp-p
0.56Vp-p
0.5Vp-p
0.4Vp-p
IC365 (7) REC/PB
REC : 0.48Vp-p
PB : 0.52Vp-p
IC360 (35) PB
0.45Vp-p
0.36Vp-p
IC362 (4) REC
1Vp-p
IC362 (8) PB
2Vp-p
IC362 (2) PB
0.44Vp-p
IC362 (28) CAM REC Y
0.54Vp-p
LINE : REC + PB (Q380)
+5V
Vcc
PB Y
CCD CLOCK
3 fsc PLL
fsc (IC360 (16))
CLAMP
1H DELAY
Y-YD
C-CD
PB C
YD
REC Y(CAMERA)
PB Y+C
REC Y+C (LINE)
RV361
Y/C SEPARATION
INVERT
LPF
CHROMA CANCEL
4.43MHz TRAP
AGC AMP
COMB
V REG
HPF
LIM
ATT
4.43MHz BPF
REC/PB
Q383
PB Y EQ OR REC Y BUFFER
Q385,386
PB Y PEAKING AMP OR REC Y AMP
Q390
EQ/BUFFER SW
Q387
PEAKING ON/OFF SW
RV363
Y LEVEL
VA PB MODE (W360 (21))
SHP OUT
SHARPNESS
EQ
EMP
REC Y
PB Y+C
Y/C MIX
HPU
HPF
NOISE CANCEL
SYNC SEP
NORMAL
DROP OUT
DOC
AGC DET
H:0.1µsec/div
V:0.5V/div
IC360 (59) REC
H:0.1µsec/div
V:0.2V/div
IC360 (60) REC
SUB-EMPHASIS
HPL
MAIN PRE-EMPHASIS
MAIN DE-EMPHASIS
CLIP
Q425
BUFFER
RV362
IR2
Q382
IR2 SWITCH
LINE : REC + PB (Q380)
IC360 (39) PB
0.2Vp-p
IC360 (30),(31) REC/PB
0.5Vp-p
IC360 (25) REC
0.6Vp-p
RV364
DEVIATION
RV365
CARRIER SET
V REG
IC360 (22),(23) PB
0.46Vp-p
REC Y RF
LIMITER
FM MOD
V-I CONV
PB Y RF
BPF
FM DEMOD
DEMOD OUT
RV366
PB Y LEVEL
Q388
Q389,427
HALF H SHIFT CANCEL
2.4Vp-p
DOC
APC ADJ
REC/PB C
PB C
HALF H KILLER
HD
AFC DET
375fH VCO
1/375
1/8
REC ON
443MHz
APC DET
APC-ID DET
4.43MHz VXO/XO
FSC
SYNC
Q410
BUFFER
Q391
V SYNC SEP
REF V
IC360 (20) REC/PB
X001 4.43MHz
IC360 (13) REC/PB
REC : 0.2Vp-p
PB : 0.3Vp-p
VOC OUT
PG
PG (Q423)
IC360 (14) REC/PB
4.4Vp-p
CF2
CARRIER INVERT
PHASE SHIFT
CF1
FREQ CONV
732KHz
4.43MHz
BURST FLAG GENERATOR
BF
BUS DECODE
SI
CK
CS
SO
ACK DET
SYNC DET
BURST ID DET
PB CONV
ACC DET
FL363
5.89MHz TRAP
ACK SW
BURST DE EMPHASIS
REC C (CAMERA)
REC C
LINE REC
PB/CAM REC
ACC AMP
FH/2 IN
BURST EMPHASIS
CHROMA EMPHASIS
REC CONV
REC C RF
Q392
TRAP FREQ WS
VA PB MODE
FL362
4.43MHz TRAP
IC360 (5) REC
0.6Vp-p
IC360 (10) PB
0.3Vp-p
IC360 (9) PB
0.4Vp-p
REC C RF
REC C (CAMERA)
CLOG
RV373
SYNC AGC
Q416
AGC GAIN SW
V MUTE (W360 (14))
REG 1.2V
AGC DET
Q426
BUFFER
RF MOD
Y/C MIX
VD INSERT
6dB AMP
CHARACTOR MIX
3dB AMP
SYNC SEP
BUS DECODER
JOG VD
VDB
VDW
IC362 (11) REC/PB
0.52Vp-p
Q366
Y/C MIX
Q367,368
CHROMA MUTE
EE C (CAMERA)
V MUTE (W360 (14))
Q369
LINE : REC+PB (Q380)
PB EE Y+C
CHROMA TRAP
Q365
CHARACTOR MIX
PB/EE Y
PB IN
IN-2
IN-1
Q364
BUFFER
REC Y (CAMERA)
REC C (CAMERA)
TP362
W362
CAMERA (VC-40)
J361
AV OUT (VIDEO)
CG WIND
EVF CHARACTOR
Q420
DATA TO SLAVE
CLK
STB
H SYNC
REF V
OSC OUT
OSC IN
V OUT
V BLK
DATA
Q421
SYNC (IC360 (20))
REF V (IC366 (7))
D372
CV360
CHARACTOR POSITION
IC368 (14) REC
0.44Vp-p
IC368 (13) REC
4Vp-p
2H
1.5Vp-p
IC363 (4) PB
RV370
DL CHROMA LEVEL
AMP
TH/DL
FSC (Q391 (IC360 (16))
PHASE SHIFT
RV369
FSC
-90° SHIFT
1/2 FH MP
1/2FH
SWD1/2FH
1/2
JOG (W360 (8))
D364
MODE
PB
RV372
C ADJ
DL360
2H DERAY
Q371,372
AMP
PB CHROMA
Q373
IC360
OPEN CXA 1200Q
SHORT CXA 1200AQ CXA 1200BQ


VA-41 BOARD (VIDEO) (See page 108.)
IC362
AGC/INPUT SELECT/VIDEO OUT
IC362 ④ REC
IC362 ② PB
IC362 ㉘ CAM REC Y
IC362 ⑧ PB
IC362 ⑪ REC/PB
1Vp-p
0.44Vp-p
0.54Vp-p
0.52Vp-p
2Vp-p
RV373
SYNC AGC
Q416
AGC GAIN SW
V MUTE (W360 ⑭)
REG 1.2V
AGC DET
AGC AMP
3dB AMP
CLAMP
PB IN
IN-2
IN-1
TP362
Q364
BUFFER
LPF
REC Y (CAMERA)
REC Y (CAMERA)
REC C (CAMERA)
REC C (CAMERA)
CAMERA (VC-40)
Y
C
W362
PB Y+C
Q426
BUFFER
RF MOD
Y/C MIX
VD INSERT
6dB AMP
CHARACTOR MIX
SYNC SEP
BUS DECODER
SO
CK
CS
SI
JOG VD
VOB
VOW
Q366
Y/C MIX
Q367, 368
CHROMA MUTE
EE C (CAMERA)
V MUTE (W360 ⑭)
Q369
LINE+REC+PB (Q380)
PB EE Y+C
PB Y+C
J361
AV OUT (VIDEO)
CHROMA TRAP
Q365
CHARACTOR MIX
PB/EE Y
Q385,386
PB Y PEAKING AMP OR REC Y AMP
Q387
PEAKING ON/OFF SW
RV363
Y LEVEL
VA PB MODE (W360 ㉑)
PB Y
IC360 ㉚, ㉛ REC/PB
0.5Vp-p
0.2Vp-p
IC360 ㊴ PB
RV362
IR2
Q382
IR2 SWITCH
LIN·REC+PB (Q380)
IC360 ㉕ REC
0.6Vp-p
Q425
BUFFER
CARRIER SET
V REG
Q388
EQ
Q389, 427
HALF H SHIFT CANCEL
IC360 ㉒, ㉓ PB
0.46Vp-p
2.4Vp-p
IC360 ⑳ REC/PB
LPF
V SYNC SEP
IC366 (1/2)
REF V
FSC
4.43MHz
REC: 0.2Vp-p
PB: 0.3Vp-p
IC360 ⑬ REC/PB
4.4Vp-p
IC360 ⑭ REC/PB
VA PB MODE
IC360 ⑤ REC
0.6Vp-p
IC360 ⑩ PB
0.3Vp-p
IC360 ⑨ PB
0.4Vp-p
CG WIND
IC367
CG WINDOW
VOW
VOB
EVF CHARACTOR
Q420
IC368
CHARACTOR GENERATOR
V OUT
V BLK
DATA
CLK
STB
H SYNC
REF V
OSC OUT
OSC IN
DATA TO SLAVE
Q421
SYNC (IC360 ⑳)
REF V (IC366 ⑦)
D372
CV360
CHARACTOR POSITION
IC368 ⑭ REC
0.44Vp-p
IC368 ⑬ REC
4Vp-p
IC363
JOG CHROMA PROCESS
IC363 ④ PB
1.5Vp-p
2H
RV370
DL CHROMA LEVEL
Q413
JOG SWITCH
JOG (W360 ⑧)
TH/DL
PB.C
AMP
TH/DL
TH CHROMA
DL CHROMA
FREQUENCY CONVERTER
SEQUENCE DET
B.F
SWD1 1/2FH
2FSC
FSC
PHASE SHIFT
(Q391 IC360 ⑯)
RV369
FSC
-90° SHIFT
X2
PHASE SHIFT
LPF
APC DET
QUASI BURST
1/2 FH
BFXCH TH/DL
1/2 FH MP
1/2FH
SWD1/2FH
1/2
FH VCO
AFC ID
MASK
HALF H KILLER
BF
BFXCH
BF GENERATOR
D364
JOG (W360 ⑧)
MODE
PB
JOG
RV368
APC LPF
Q398
SYNC (IC360 ⑳)
DOC (W360 ⑧)
IC363 ⑮ PB
0.24Vp-p
CNR
RV372
C ADJ
Q373, 374
AMP
Q357 ~ 377
LIMITER
DL360
2H DERAY
Q371, 372
AMP
Q370
BUFFER
PB CHROMA
FL365
4.43MHz BPF
PB CHROMA
LINE·REC+PB (Q380)
IC363 ⑩ PB
0.26Vp-p
IC363 ⑪ PB
VIDEO
EVF (VF-13)
V CK
V CS
V SO
DATA TO SLAVE
CLK
STB
CG WINDOW
CAMPOWER
VA PB MODE
CAM POWER
VA PB MODE
Q378
Q379, 380
LINE·REC+PB
D361
JOG
RF SW P
V MUTE
JOG
RF SW P
V MUTE
JO/VD
PG
Q423
Q395
Q396
JOG·DOC
Q397, 424
DOC (W360 ⑧)
SP/LP
H CHG
HD
REF V
CLOG
W360
SERVO/SYSCON (SS-86)
VA-41 BOARD (CONDUCTOR SIDE)
IC250
IC364
IC365
IC368
IC367
IC361
IC362
IC360
IC590
IC366
IC363
SS-86 BOARD (CONDUCTOR SIDE)
IC301
IC001
IC006
IC003
IC004
IC007
IC202
IC201
IC200
IC203
VA-41
SS-86

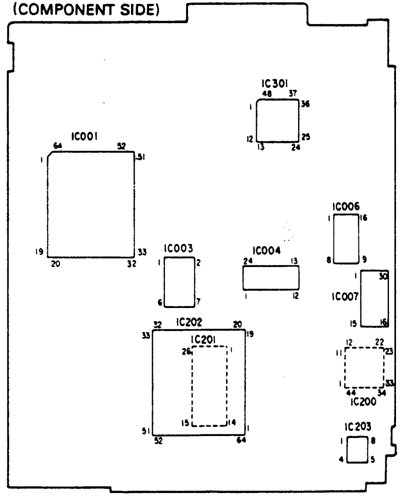
	IC360
OPEN	CXA 1200Q
SHORT	CXA 1200AQ CXA 1200BQ

- **Components on the rear side indicated by "- - -" line.**

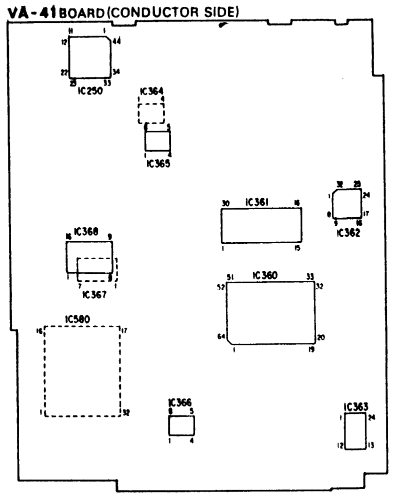
3-7. SERVO/SYSTEM CONTROL BLOCK DIAGRAM

- **( ) near the board name indicates the schematic diagram page.**

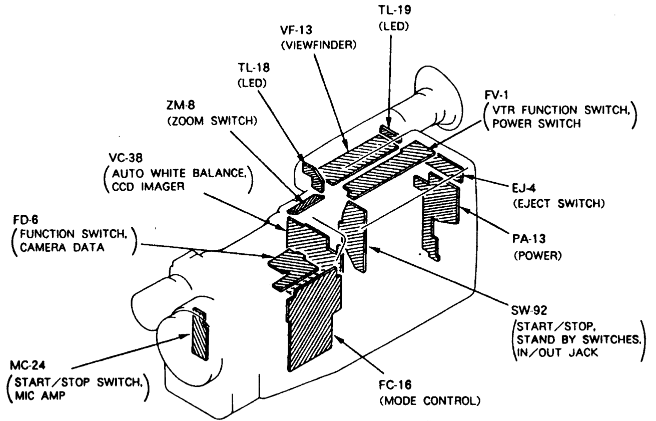
SS-86BOARD (COMPONENT SIDE)

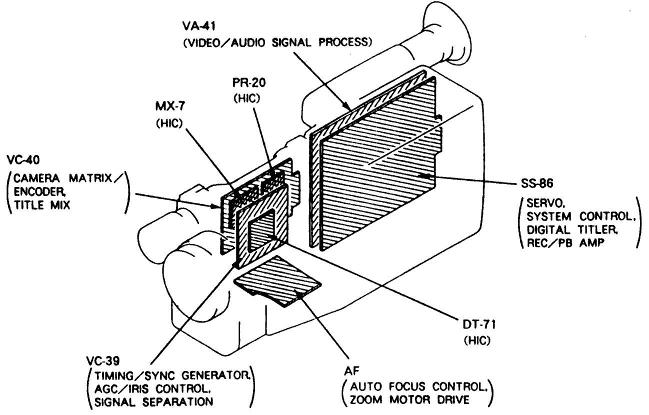

IC301
IC001
IC006
IC003
IC004
IC007
IC202
IC201
IC200
IC203

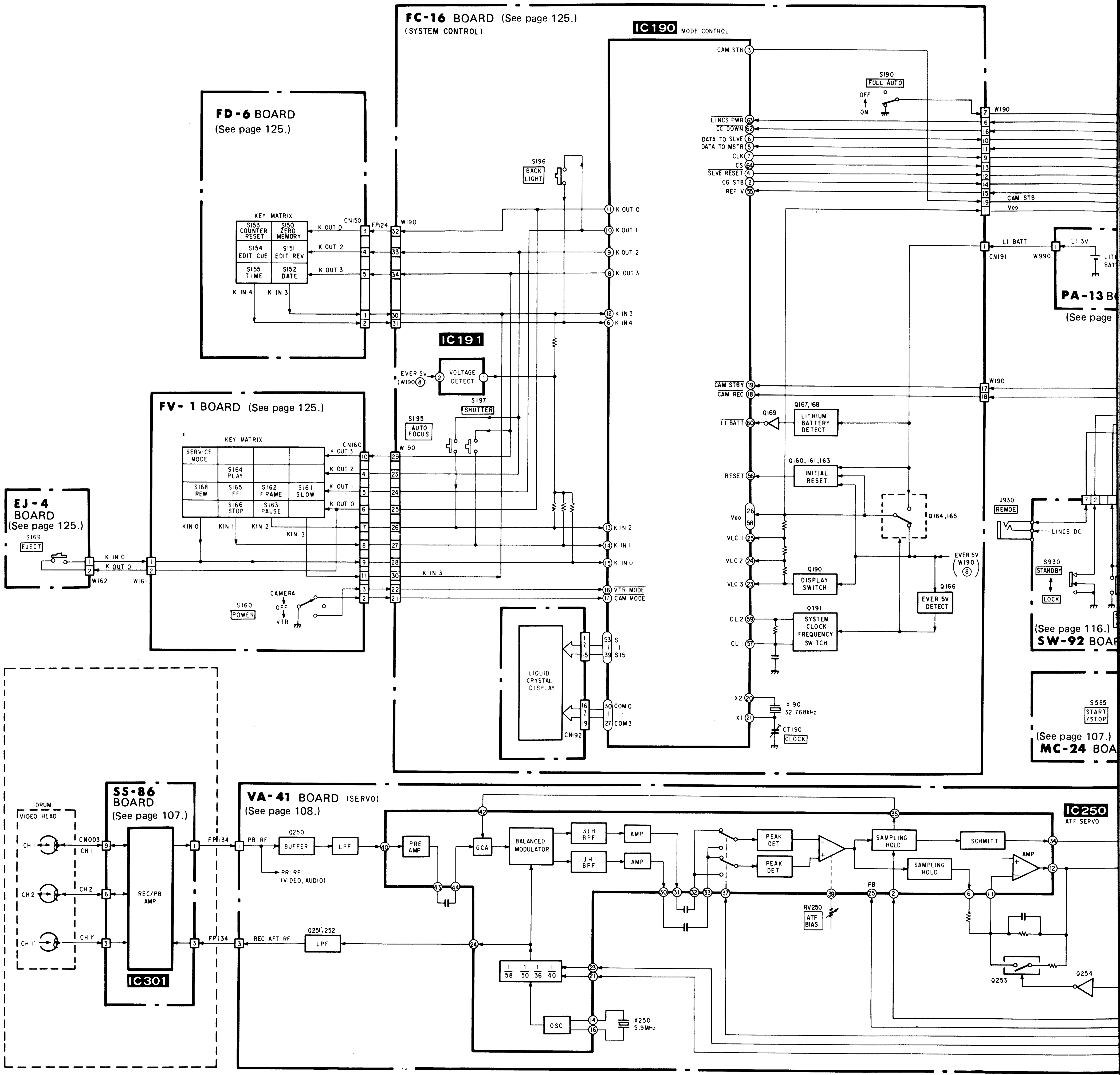
VA-41BOARD(CONDUCTOR SIDE)

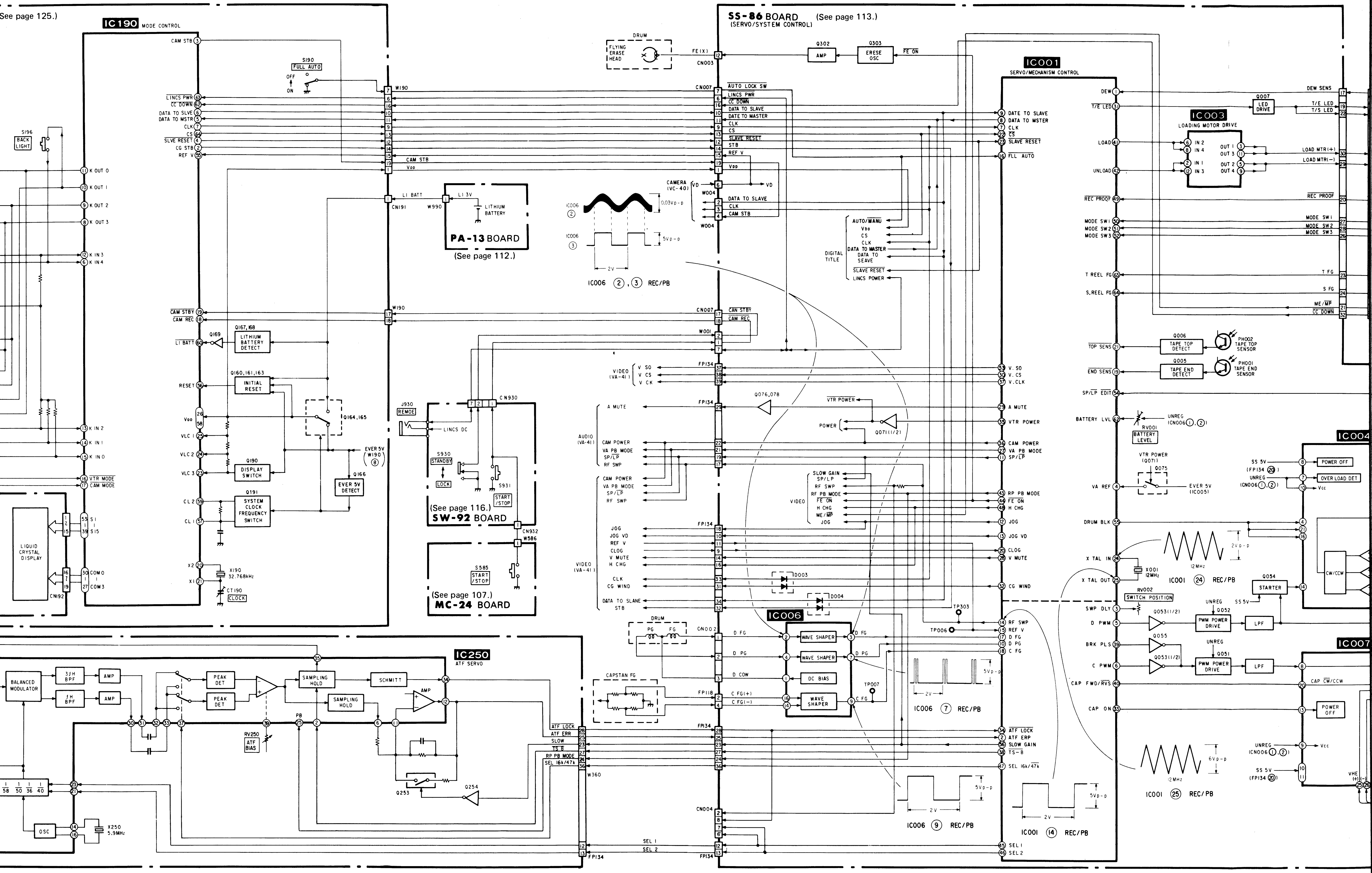

IC250
IC364
IC365
IC361
IC362
IC368
IC367
IC360
IC580
IC366
IC363

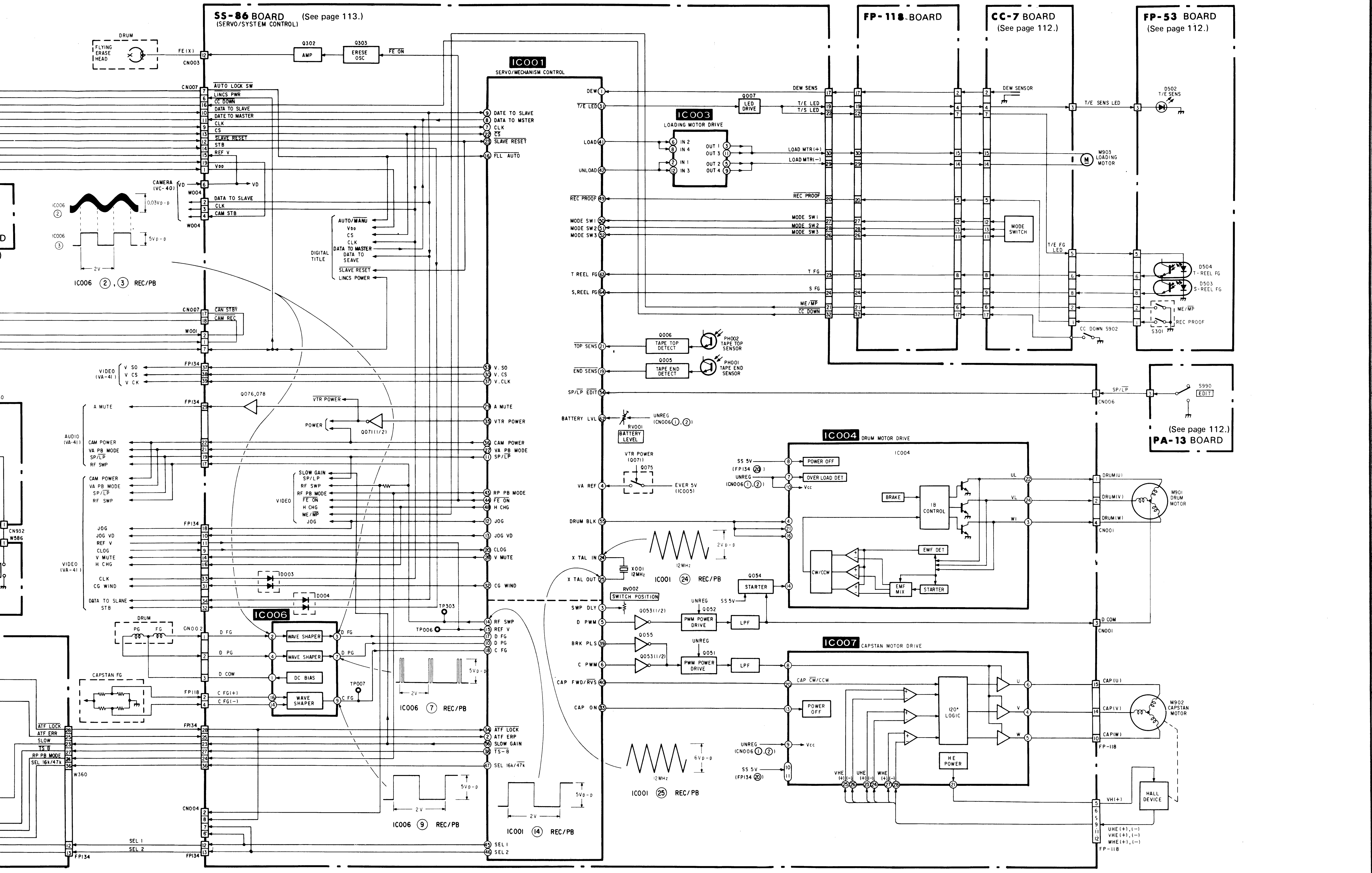
- **Components on the rear side indicated by "- - -" line.**


TL-19 (LED)
VF-13 (VIEWFINDER)
TL-18 (LED)
ZM-8 (ZOOM SWITCH)
VC-38 (AUTO WHITE BALANCE, CCD IMAGER)
FD-6 (FUNCTION SWITCH, CAMERA DATA)
MC-24 (START/STOP SWITCH, MIC AMP)
FV-1 (VTR FUNCTION SWITCH, POWER SWITCH)
EJ-4 (EJECT SWITCH)
PA-13 (POWER)
SW-92 (START/STOP, STAND BY SWITCHES, IN/OUT JACK)
FC-16 (MODE CONTROL)


VA-41 (VIDEO/AUDIO SIGNAL PROCESS)
PR-20 (HIC)
MX-7 (HIC)
VC-40 (CAMERA MATRIX, ENCODER, TITLE MIX)
SS-86 (SERVO, SYSTEM CONTROL, DIGITAL TITLER, REC/PB AMP)
DT-71 (HIC)
VC-39 (TIMING/SYNC GENERATOR, AGC/IRIS CONTROL, SIGNAL SEPARATION)
AF (AUTO FOCUS CONTROL, ZOOM MOTOR DRIVE)


FC-16 BOARD (See page 125.)
(SYSTEM CONTROL)
IC190 MODE CONTROL
CAM STB
LINCS PWR
CC DOWN
DATA TO SLVE
DATA TO MSTR
CLK
CS
SLVE RESET
CG STB
REF V
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K IN 3
K IN 4
K IN 2
K IN 1
K IN 0
VTR MODE
CAM MODE
S1
S15
COM 0
COM 3
CAM STBY
CAM REC
LI BATT
RESET
VDD
VLC 1
VLC 2
VLC 3
CL 2
CL 1
X2
X1
S190 FULL AUTO
OFF
ON
S196 BACK LIGHT
IC191
VOLTAGE DETECT
EVER 5V (W190⑧)
S197 SHUTTER
S195 AUTO FOCUS
Q169
Q167,168 LITHIUM BATTERY DETECT
Q160,161,163 INITIAL RESET
Q164,165
Q190 DISPLAY SWITCH
Q191 SYSTEM CLOCK FREQUENCY SWITCH
Q166 EVER 5V DETECT
EVER 5V (W190 ⑧)
X190 32.768kHz
CT190 CLOCK
LIQUID CRYSTAL DISPLAY
CN192
W190
CAM STB
VDD
LI BATT
CN191
W990
LI 3V
LITH BATT
PA-13 B
(See page
J930 REMOTE
LINCS DC
S930 STANDBY
LOCK
(See page 116.)
SW-92 BOA
S585 START/STOP
(See page 107.)
MC-24 BOA
FD-6 BOARD
(See page 125.)
KEY MATRIX
S153 COUNTER RESET
S150 ZERO MEMORY
S154 EDIT CUE
S151 EDIT REV
S155 TIME
S152 DATE
K IN 4
K IN 3
CN150
FP124
FV-1 BOARD (See page 125.)
KEY MATRIX
CN160
SERVICE MODE
S164 PLAY
S168 REW
S165 FF
S162 FRAME
S161 SLOW
S166 STOP
S163 PAUSE
KIN 0
KIN 1
KIN 2
KIN 3
S160 POWER
CAMERA
OFF
VTR
EJ-4 BOARD
(See page 125.)
S169 EJECT
K IN 0
K OUT 0
W162
W161
SS-86 BOARD
(See page 107.)
DRUM VIDEO HEAD
CH 1
CH 2
CH 1'
CN003
REC/PB AMP
IC301
FP134
VA-41 BOARD (SERVO)
(See page 108.)
PB RF
Q250 BUFFER
LPF
PR RF (VIDEO, AUDIO)
PRE AMP
GCA
BALANCED MODULATOR
3/H BPF
1/H BPF
AMP
PEAK DET
SAMPLING HOLD
SCHMITT
AMP
REC AFT RF
Q251,252 LPF
1/58
1/50
1/36
1/40
OSC
X250 5.9MHz
RV250 ATF BIAS
PB
Q253
Q254
IC250 ATF SERVO


See page 125.)
IC190 MODE CONTROL
CAM STB
LINCS PWR
CC DOWN
DATA TO SLVE
DATA TO MSTR
CLK
CS
SLVE RESET
CG STB
REF V
S190 FULL AUTO
OFF
ON
S196 BACK LIGHT
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K IN 3
K IN 4
K IN 2
K IN 1
K IN 0
VTR MODE
CAM MODE
W190
CN191
W990
LI BATT
LI 3V
LITHIUM BATTERY
PA-13 BOARD
(See page 112.)
CAM STBY
CAM REC
LI BATT
Q169
Q167, 168 LITHIUM BATTERY DETECT
Q160, 161, 163 INITIAL RESET
RESET
Q164, 165
VDD
VLC 1
VLC 2
VLC 3
Q190 DISPLAY SWITCH
EVER 5V (W190 ⑧)
Q166 EVER 5V DETECT
Q191 SYSTEM CLOCK FREQUENCY SWITCH
CL 2
CL 1
X2
X1
X190 32.768kHz
CT190 CLOCK
LIQUID CRYSTAL DISPLAY
CN192
S1 – S15
COM 0 – COM 3
J930 REMOTE
LINCS DC
CN930
S930 STANDBY
LOCK
S931 START /STOP
(See page 116.)
SW-92 BOARD
CN932
W586
S585 START /STOP
(See page 107.)
MC-24 BOARD
SS-86 BOARD (SERVO/SYSTEM CONTROL) (See page 113.)
DRUM
FLYING ERASE HEAD
FE(X)
CN003
Q302 AMP
Q303 ERESE OSC
FE ON
IC001 SERVO/MECHANISM CONTROL
CN007
AUTO LOCK SW
LINCS PWR
CC DOWN
DATA TO SLAVE
DATE TO MASTER
CLK
CS
SLAVE RESET
STB
REF V
VDD
CAMERA (VC-40)
VD
W004
DATA TO SLAVE
CLK
CAM STB
IC006 ②
0.03Vp-p
IC006 ③
5Vp-p
2V
IC006 ②, ③ REC/PB
DIGITAL TITLE
AUTO/MANU
VDD
CS
CLK
DATA TO MASTER
DATA TO SEAVE
SLAVE RESET
LINCS POWER
CAN STBY
CAM REC
W001
VIDEO (VA-41)
V SO
V CS
V CK
FP134
Q076, 078
VTR POWER
POWER
Q071(1/2)
AUDIO (VA-41)
A MUTE
CAM POWER
VA PB MODE
SP/LP
RF SWP
SLOW GAIN
RF PB MODE
FE ON
H CHG
ME/MP
JOG
JOG
JOG VD
REF V
CLOG
V MUTE
H CHG
CLK
CG WIND
DATA TO SLANE
STB
D003
D004
DRUM PG FG
CN002
IC006
WAVE SHAPER
DC BIAS
D FG
D PG
D COW
CAPSTAN FG
FP118
C FG(+)
C FG(−)
TP303
TP006
TP007
C FG
IC006 ⑦ REC/PB
IC006 ⑨ REC/PB
5Vp-p
2V
IC001 ⑭ REC/PB
CN004
SEL 1
SEL 2
FP134
W360
DATE TO SLAVE
DATA TO MSTER
CLK
CS
SLAVE RESET
FLL AUTO
V. SO
V. CS
V. CLK
A MUTE
VTR POWER
CAM POWER
VA PB MODE
SP/LP
RP PB MODE
FE ON
H CHG
JOG
JOG VD
CLOG
V MUTE
CG WIND
RF SWP
REF V
D FG
D PG
C FG
ATF LOCK
ATF ERP
SLOW GAIN
TS-B
SEL 16k/47k
SEL 1
SEL 2
DEW
T/E LED
Q007 LED DRIVE
IC003 LOADING MOTOR DRIVE
LOAD
UNLOAD
IN 2
IN 4
IN 1
IN 3
OUT 1
OUT 3
OUT 2
OUT 4
DEW SENS
T/E LED
T/S LED
LOAD MTR(+)
LOAD MTR(−)
REC PROOF
MODE SW1
MODE SW2
MODE SW3
T REEL FG
S.REEL FG
T FG
S FG
ME/MP
CC DOWN
TOP SENS
Q006 TAPE TOP DETECT
PH002 TAPE TOP SENSOR
END SENS
Q005 TAPE END DETECT
PH001 TAPE END SENSOR
SP/LP EDIT
BATTERY LVL
UNREG (CN006①, ②)
RV001 BATTERY LEVEL
VTR POWER (Q071)
Q075
EVER 5V (IC005)
VA REF
IC004
SS 5V (FP134 ⑳)
UNREG (CN006①, ②)
POWER OFF
OVER LOAD DET
Vcc
DRUM BLK
X TAL IN
X TAL OUT
X001 12MHz
2Vp-p
12MHz
IC001 ㉔ REC/PB
Q054 STARTER
CW/CCW
RV002 SWITCH POSITION
SWP DLY
D PWM
Q053(1/2)
Q052
UNREG
SS 5V
PWM POWER DRIVE
LPF
BRK PLS
Q055
Q051
C PWM
CAP FWD/RVS
CAP ON
IC007
CAP CW/CCW
POWER OFF
6Vp-p
12MHz
IC001 ㉕ REC/PB
UNREG (CN006①, ②)
SS 5V (FP134 ⑳)
Vcc
VHE
IC250 ATF SERVO
BALANCED MODULATOR
3fH BPF
fH BPF
AMP
PEAK DET
SAMPLING HOLD
SCHMITT
AMP
RV250 ATF BIAS
PB
Q253
Q254
ATF LOCK
ATF ERR
SLOW
TS B
RP PB MODE
SEL 16k/47k
58 50 36 40
OSC
X250 5.9MHz


SS-86 BOARD (See page 113.)
(SERVO/SYSTEM CONTROL)
FP-118 BOARD
CC-7 BOARD (See page 112.)
FP-53 BOARD (See page 112.)
PA-13 BOARD (See page 112.)
DRUM
FLYING ERASE HEAD
FE(X)
CN003
Q302 AMP
Q303 ERESE OSC
FE ON
IC001 SERVO/MECHANISM CONTROL
IC003 LOADING MOTOR DRIVE
IC004 DRUM MOTOR DRIVE
IC006
IC007 CAPSTAN MOTOR DRIVE
CN007
AUTO LOCK SW
LINCS PWR
CC DOWN
DATA TO SLAVE
DATE TO MASTER
CLK
CS
SLAVE RESET
STB
REF V
VDD
CAMERA (VC-40)
VD
W004
CAM STB
0.03Vp-p
5Vp-p
2V
IC006 ②,③ REC/PB
DIGITAL TITLE
AUTO/MANU
LINCS POWER
CAN STBY
CAM REC
W001
FP134
VIDEO (VA-41)
V SO
V CS
V CK
AUDIO (VA-41)
A MUTE
CAM POWER
VA PB MODE
SP/LP
RF SWP
Q076,078
VTR POWER
POWER
Q071(1/2)
SLOW GAIN
RF PB MODE
FE ON
H CHG
ME/MP
JOG
JOG VD
REF V
CLOG
V MUTE
CLK
CG WIND
DATA TO SLANE
STB
D003
D004
CN932
W586
PG
FG
CN002
D FG
D PG
D COW
CAPSTAN FG
FP118
C FG(+)
C FG(-)
WAVE SHAPER
DC BIAS
TP007
TP006
TP303
IC006 ⑦ REC/PB
IC006 ⑨ REC/PB
IC001 ⑭ REC/PB
ATF LOCK
ATF ERR
SLOW
TS B
RP PB MODE
SEL 16k/47k
W360
CN004
SEL 1
SEL 2
DATE TO SLAVE
DATA TO MSTER
SLAVE RESET
FLL AUTO
V.SO
V.CS
V.CLK
RP PB MODE
ATF ERP
TS-B
DEW
T/E LED
LOAD
UNLOAD
REC PROOF
MODE SW1
MODE SW2
MODE SW3
T REEL FG
S.REEL FG
TOP SENS
END SENS
SP/LP EDIT
BATTERY LVL
VA REF
DRUM BLK
X TAL IN
X TAL OUT
SWP DLY
D PWM
BRK PLS
C PWM
CAP FWD/RVS
CAP ON
Q007 LED DRIVE
IN 2
IN 4
IN 1
IN 3
OUT 1
OUT 3
OUT 2
OUT 4
DEW SENS
T/E LED
T/S LED
LOAD MTR(+)
LOAD MTR(-)
T FG
S FG
CC DOWN
Q006 TAPE TOP DETECT
PH002 TAPE TOP SENSOR
Q005 TAPE END DETECT
PH001 TAPE END SENSOR
DEW SENSOR
MODE SWITCH
T/E FG LED
D502 T/E SENS
T/E SENS LED
M903 LOADING MOTOR
D504 T-REEL FG
D503 S-REEL FG
ME/MP
REC PROOF
S301
CC DOWN S902
CN006
S990 EDIT
UNREG (CN006①,②)
RV001 BATTERY LEVEL
VTR POWER (Q071)
Q075
EVER 5V (IC005)
X001 12MHz
12MHz
2Vp-p
IC001 ㉔ REC/PB
RV002 SWITCH POSITION
Q053(1/2)
Q052
PWM POWER DRIVE
LPF
Q054 STARTER
SS 5V
Q055
Q051
POWER OFF
OVER LOAD DET
BRAKE
1B CONTROL
EMF DET
CW/CCW
EMF MIX
STARTER
UL
VL
WL
DRUM(U)
DRUM(V)
DRUM(W)
CN001
M901 DRUM MOTOR
D COM
CAP CW/CCW
120° LOGIC
HE POWER
VHE
UHE
WHE
CAP(U)
CAP(V)
CAP(W)
M902 CAPSTAN MOTOR
HALL DEVICE
VH(+)
UHE(+),(-)
VHE(+),(-)
WHE(+),(-)
FP-118
6Vp-p
IC001 ㉕ REC/PB

3-8. MECHANISM CONTROLLER (µPD78112-GF)

This is the 8-bit, single chip microprocessor having the following characteristics.

- µCOM-78K/I
- high speed instruction execution
  Instruction cycle : 333ns/12MHz
- On-chip memory mapping for peripheral hardware (special function register)
- On-chip high function interrupt controller
  Two kinds of processing forms (vector interrupt function/macro service function)
- On-chip high precision A/D converter
  8 bit precision : 8 analog inputs
  One analog input conversion time : 26.7µs/12MHz
- On-chip hardware suitable for servo control of VTR, etc. (servo control unit)
  16 bit free running counter + capture register x 2
  special pulse output control function
  12 bit precision PWM output x 2

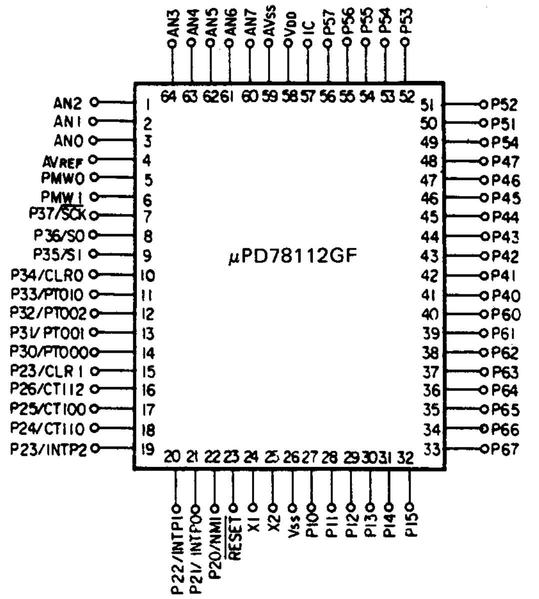

AN3
AN4
AN5
AN6
AN7
AVss
VDD
IC
P57
P56
P55
P54
P53
AN2
AN1
AN0
AVREF
PMW0
PMW1
P37/SCK
P36/S0
P35/SI
P34/CLR0
P33/PT010
P32/PT002
P31/PT001
P30/PT000
P23/CLR1
P26/CT112
P25/CT100
P24/CT110
P23/INTP2
µPD78112GF
P52
P51
P54
P47
P46
P45
P44
P43
P42
P41
P40
P60
P61
P62
P63
P64
P65
P66
P67
P22/INTP1
P21/INTP0
P20/NMI
RESET
X1
X2
Vss
P10
P11
P12
P13
P14
P15
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60 61 62 63 64

Fig. 1. µPD78112 pin assignment diagram

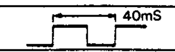
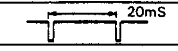
PIN NO	Signal name	I/O	Signal status	Function
1	DEW	I	Analog input	DEW detecting pin. When DEW (condensation) occurs, more than 430mV generates.
2	ATF ERR	I	Analog input	ATF ERROR input pin.
3	SWP DLY	I	Analog input	RF SWP adjustment input pin.
4	VA REF	O		A/D converter reference voltage input pin.
5	D PWM	O	PWM output	Drum motor drive signal
6	C PWM	O	PWM output	Capstan motor drive signal
7	CLK	I		Serial communication clock input.
8	DATA TO MSTR	O		Data output pin for the data to be sent to mode control CPU.
9	DATA TO SLVE	I		Data input pin for the data coming from the mode control CPU.
10	D PG	I		Drum PG input pin.
11	SP/$\overline{\text{LP}}$	O	Logic status	Playback mode output pin. SP="H", LP="L"
12	$\overline{\text{JOG}}$	O	Logic status	Video circuit normal/variable speed playback select signal. "H" during STILL, SLOW, FRAM, CUE/REV, FRSEARCH, REC REV, EDIT CUE, EDIT REV.
13	JOG VD	O	Logic status	False VD output inserted into video signal during variable speed playback mode.
14	RF SWP	O	 40mS	RF SWP output pin.
15	REF V	I	 20mS	REF V input pin.
16	$\overline{\text{FULL AUTO}}$	I	Logic status	"L" during AUTO LOCK
17	D FG	I		Drum FG input.
18	C FG	I		Capstan FG input.
19	$\overline{\text{END SENS}}$	I	Logic status	END-side END sensor input.

Table 1 (1)

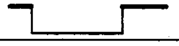
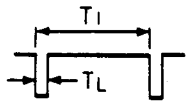
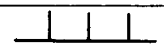
<table>
<tr><th>PIN NO</th><th>Signal name</th><th>I/O</th><th>Signal status</th><th>Functions</th></tr>
<tr><td>20</td><td>CLOG</td><td>I</td><td>Logic status</td><td>Head clogging detect input.</td></tr>
<tr><td>21</td><td>$\overline{\text{TOP SENS}}$</td><td>I</td><td>Logic status</td><td>TOP-side TOP sensor input.</td></tr>
<tr><td>22</td><td>$\overline{\text{CS}}$</td><td>I</td><td>Logic status</td><td>Input signal to start data communication. Starting at fall-down edge.</td></tr>
<tr><td>23</td><td>$\overline{\text{SLVE RESET}}$</td><td>I</td><td>Logic status</td><td>RESET input. "L" RESET.</td></tr>
<tr><td>24</td><td>X'TAL IN</td><td>I</td><td rowspan="2">12MHz
 </td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>25</td><td>X'TAL OUT</td><td>O</td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>26</td><td>V_{SS}</td><td></td><td></td><td>GND pin</td></tr>
<tr><td>27</td><td>VA PB MODE</td><td>O</td><td>Logic status</td><td>Video, audio REC/PB select signal. "H" during PB.</td></tr>
<tr><td>28</td><td>V MUTE</td><td>O</td><td>Logic status</td><td>Video, muting signal. "H" during muting.</td></tr>
<tr><td>29</td><td>A MUTE</td><td>O</td><td>Logic status</td><td>Audio, muting signal. "H" during muting.</td></tr>
<tr><td>30</td><td>VIDEO CS</td><td>I</td><td></td><td>Input signal to start video data communication.</td></tr>
<tr><td>31</td><td>$\overline{\text{T/E LED}}$</td><td>O</td><td> T_I T_L</td><td>Tape top/end detecting LED ON/OFF.
Reel rotation detecting LED ON/OFF.
<table><tr><th>mode</th><th>REC/PB</th><th>CUE/REV</th><th>FF/REW</th></tr><tr><td>T_I</td><td>100</td><td>14</td><td>2</td></tr><tr><td>T_L</td><td>1</td><td>1</td><td>1</td></tr></table>(unit in msec)</td></tr>
<tr><td>32</td><td>CG WIND</td><td>O</td><td>"H"=MIX REC
"L"=NOT</td><td>Selection signal whether character generator output will be recorded or will not be recorded.</td></tr>
<tr><td>33</td><td>CAP ON</td><td>O</td><td>Logic status</td><td>Capstan motor ON/OFF signal. "H" level means capstan motor ON.</td></tr>
<tr><td>34</td><td>$\overline{\text{ATF LOCK}}$</td><td>I</td><td>Logic status</td><td>"L" when PB mode ATF phase servo is normally phase-locked.</td></tr>
<tr><td>35</td><td>VTR Power</td><td>O</td><td>Logic status</td><td rowspan="2">DC-DC converter ON/OFF signal.<table><tr><th>mode</th><th>VTR Power</th><th>CAM Power</th></tr><tr><td>VTR</td><td>"H"</td><td>"L"</td></tr><tr><td>OFF</td><td>"L"</td><td>"L"</td></tr><tr><td>CAM</td><td>"H"</td><td>"H"</td></tr></table></td></tr>
<tr><td>36</td><td>CAM Power</td><td>O</td><td>Logic status</td></tr>
<tr><td>37</td><td>VIDEO CLK</td><td>I</td><td> </td><td>Clock for video serial data communication.</td></tr>
<tr><td>38</td><td>TS B</td><td>O</td><td> </td><td>ATF LOCK sampling hold signal. "L" during sampling mode. "H" during hold mode.</td></tr>
<tr><td>39</td><td>CAP BRK</td><td>O</td><td>Logic status</td><td>This is the signal that applies full voltage to capstan motor.</td></tr>
<tr><td>40</td><td>CAP FWD/$\overline{\text{RVS}}$</td><td>O</td><td>Logic status</td><td>Capstan motor rotating direction select signal. "H" during normal direction (FWD) rotation.</td></tr>
<tr><td>41</td><td>LOAD</td><td>O</td><td>Logic status</td><td rowspan="2">Threading motor control signal.<table><tr><th>Operation
Signal name</th><th>LOAD</th><th>UNLOAD</th><th>BRAKE</th></tr><tr><td>LOAD</td><td>H</td><td>L</td><td>H</td></tr><tr><td>UNLOAD</td><td>L</td><td>H</td><td>H</td></tr></table></td></tr>
<tr><td>42</td><td>UNLOAD</td><td>O</td><td>Logic status</td></tr>
<tr><td>43</td><td>RP PB MODE</td><td>O</td><td>Logic status</td><td>REC/PB amplifier REC/PB select signal. "H" during PB.</td></tr>
<tr><td>44</td><td>$\overline{\text{FE ON}}$</td><td>O</td><td>Logic status</td><td>Flying erase oscillation ON/OFF signal, "L" during oscillation.</td></tr>
</table>

Table 1 (2)

<table>
<tr><th>PIN NO</th><th>Signal name</th><th>I／O</th><th>Signal status</th><th>Functions</th></tr>
<tr><td>45</td><td>SEL1</td><td>O</td><td>Logic status</td><td rowspan="2">ATF REF PILOT signal frequency control.
<table><tr><td>ATF REF PILOT</td><td>f_1</td><td>f_2</td><td>f_3</td><td>f_4</td></tr><tr><td>SEL1</td><td>H</td><td>L</td><td>H</td><td>L</td></tr><tr><td>SEL2</td><td>H</td><td>H</td><td>L</td><td>L</td></tr></table></td></tr>
<tr><td>46</td><td>SEL2</td><td>O</td><td>Logic status</td></tr>
<tr><td>47</td><td>SEL 16K／$\overline{\text{47K}}$</td><td>O</td><td>Logic status</td><td>ATF BPF select signal. "L" when detecting ATF error in f1 and f3 tracks. "H" when detecting ATF error in f2 and f4 tracks.</td></tr>
<tr><td>48</td><td>HCHG</td><td>O</td><td>Logic status</td><td>Head select signal. "H"=CH-1' "L"=CH-1.</td></tr>
<tr><td>49</td><td>$\overline{\text{REC PROOF SW}}$</td><td>I</td><td>Logic status</td><td>"H" when cassette's erroneous erasure preventing switch is set in the erasure prevention side.</td></tr>
<tr><td>50</td><td>MSW1</td><td>I</td><td>Logic status</td><td rowspan="3">Mechanism mode switch input (three bit structure, mechanical position detection)</td></tr>
<tr><td>51</td><td>MSW2</td><td>I</td><td>Logic status</td></tr>
<tr><td>52</td><td>MSW3</td><td>I</td><td>Logic status</td></tr>
<tr><td>53</td><td>VIDEO SO</td><td>O</td><td>Logic status</td><td>Data line for the data to be sent to CXA1201.</td></tr>
<tr><td>54</td><td>$\overline{\text{EDIT}}$</td><td>I</td><td></td><td>Input signal for EDIT selection. "H": OFF. "L": ON</td></tr>
<tr><td>55</td><td>DRUM BRK</td><td>O</td><td>Logic status</td><td>Slow mode drum fH compensation drum brake signal.</td></tr>
<tr><td>56</td><td>SLOW GAIN</td><td>O</td><td>Logic status</td><td>ATF ERROR's gain select signal.</td></tr>
<tr><td>57</td><td>VPP</td><td></td><td></td><td>Fixed to power supply voltage.</td></tr>
<tr><td>58</td><td>V_{DD}</td><td></td><td></td><td>Power supply pin.</td></tr>
<tr><td>59</td><td>AV_{SS}</td><td></td><td></td><td>A/D converter's GND pin.</td></tr>
<tr><td>60</td><td>STILL ADJ</td><td>I</td><td></td><td>Input signal for STILL noise position adjustment.</td></tr>
<tr><td>61</td><td>JAP／$\overline{\text{USA}}$</td><td>I</td><td>Analog input</td><td>Destination select SW input. More than 2.5V JAPAN. Less than 2.5V USA.</td></tr>
<tr><td>62</td><td>BATT LVL</td><td>I</td><td>Analog input</td><td>BATTERY LEVEL input. This is input at approx.1/2.</td></tr>
<tr><td>63</td><td>T REEL FG</td><td>I</td><td>Analog input</td><td>Take-up side REEL FG input. Used to detect reel rotation.</td></tr>
<tr><td>64</td><td>S REEL FG</td><td>I</td><td>Analog input</td><td>Supply side REEL FG input. Used to detect reel rotation.</td></tr>
</table>

Table 1 (3)

3-9. SYSTEM CONTROL – CAMERA BLOCK INTERFACE

Signal	I/O	Pin No.	Input/Output Level
$\overline{\text{AF ON}}$	O	SS-86 board IC200 ⑤	"H" when auto focus in ON.
$\overline{\text{TELE IN}}$	I	SS-86 board IC200 ③	"L" when zoom switch TELE is pressed.
$\overline{\text{WIDE IN}}$	I	SS-86 board IC200 ④	"L" when zoom switch WIDE is pressed.
$\overline{\text{TALLY}}$	O	SS-86 board IC200 ⑭	"L" when in CAMERA mode and REC mode.
CAM STB	O	FC-16 board IC190 ③	4V cycle "H" pulse. () Strobe signal for serial data transmission.
CLK	O	FC-16 board IC190 ⑦	2V cycle "L" Pulse series. ( ) Serial data transmission clock.
DATA TO SLAVE	O	FC-16 board IC190 ⑥	2V cycle pulse series. ( ) Serial data transmission.
TELE OUT	O	SS-86 board IC200 ⑦	"H" during the zoom motor is rotating TELE direction.
WIDE OUT	O	SS-86 board IC200 ⑧	"H" during the zoom motor is rotating WIDE direction.
BACK LIGHT	O	SS-86 board IC200 ⑥	"H" during Back Light is lit.

3-10. SYSTEM CONTROL – VIDEO, AUDIO BLOCK INTERFACE

Signal	I/O	Pin No.	VTR mode													CAMERA mode			
			STOP	FF	REW	FF SEARCH		PB	PICTUER SEARCH		PB•PAUSE	FRAME	SLOW	REC	REC. PAUSE	STAND-BY	EDIT CUE	EDIT REVIEW	REC
						CUE	REVIEW		CUE	REVIEW									
SP/$\overline{\text{LP}}$	O	SS-86 board IC001 ⑪	H	H	H	＊1	＊1	＊2	＊1	＊1	＊1	＊1	＊1	H	H	H	H	H	H
$\overline{\text{JOG}}$	O	SS-86 board IC001 ⑫	H	H	H	L	L	H	L	L	L	L	L	H	H	H	L	L	H
JOG VD	O	SS-86 board IC001 ⑬	L	L	L	＊3	＊3	L	＊3	＊3	＊3	＊3	＊3	L	L	L	＊3	＊3	L
VA SWP	O	SS-86 board IC001 ⑭	H/L	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4
REF V	O	SS-86 board IC001 ⑮	＊5	＊5	＊5	L	L	L	L	L	L	L	L	＊5	＊5	＊5	L	L	＊5
CLOG	I	SS-86 board IC001 ⑳	H	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	H			＊6	＊6	H
VA PB MODE	O	SS-86 board IC001 ㉗	L	L	L	H	H	H	H	H	H	H	H	L	L	L	H	H	L
V MUTE	O	SS-86 board IC001 ㉘	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
A MUTE	O	SS-86 board IC001 ㉙	L	L	L	H	H	L	H	H	H	H	H	L	L	L	H	H	L
CG WIND	O	SS-86 board IC001 ㉜	H	H	H	H	H	H	H	H	H	H	H	H	H	＊7	＊7	＊7	＊7
CAM PWR	O	SS-86 board IC001 ㊱	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H
RP PB MODE	O	SS-86 board IC001 ㊸	H	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	L
$\overline{\text{FE ON}}$	O	SS-86 board IC001 ㊹	H	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	L
TAPE2/$\overline{\text{TAPE1}}$	O	FP-53board S301	"L" when using MP type tape.																
$\overline{\text{EDIT}}$	O	PA-13 board S990	"L" when EDIT switch (PA-13 board S990) is turuned ON.																
DATA TO SLAVE	O	FC-16 board IC190 ⑥	V cycle "L" pulse series (VTR mode)													"L" pulse series (CAMERA mode)			
CLK	O	FC-16 board IC190 ⑦	V cycle "L" pulse series (VTR mode)													"L" pulse series (CAMERA mode)			
CG STB	O	FC-16 board IC190 ②	L	L	L	L	L	L	L	L	L	L	L	L	L	＊8	＊8	＊8	＊8

＊1 Outputs identification results is PB mode immediately preceding. SP mode "H" , LP mode "L" .

＊2 Outputs identification results of playback tape recording mode (SP/LP). SP mode "H" , LP mode "L" .

＊3 False VD signal (V cylce "H" pulse)

＊4 30Hz 50% duty pulse. Synchronized to drum rotation.

＊5 V cycle "L" pulse separated from line input video signal or camera video signal.

＊6 "H" at tape no signal portion or dropout portion. Input for head clogging detection.

＊7 V cycle pulse

＊8 2V cycle pulse series.

3-11. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE

Signal	I/O	Pin No.	VTR MODE						
			STOP	FF	REW	FR SEARCH		PB	PIC
						CUE	REVIEW		CU
ATF ERR	I	SS-86 board IC001 ②		＊1	＊1	＊2	＊2	＊2	＊
SWP DLY ＊3	I	SS-86 board IC001 ③							
D PWM	O	SS-86 board IC001 ⑤	L	＊4	＊4	＊4	＊4	＊4	＊
C PWM	O	SS-86 board IC001 ⑥	L	＊5	＊5	＊5	＊5	＊5	＊
D PG	I	SS-86 board IC001 ⑩	L	＊6	＊6	＊6	＊6	＊6	＊
RF SWP	O	SS-86 board IC001 ⑭	H/L	＊7	＊7	＊7	＊7	＊7	＊
REF V	I	SS-86 board IC001 ⑮	＊8	＊8	＊8	L	L	L	L
D FG	I	SS-86 board IC001 ⑰	H	＊9	＊9	＊9	＊9	＊9	＊
C FG	I	SS-86 board IC001 ⑱	H/L	＊10	＊10	＊11	＊12	＊13	＊
CAP ON	O	SS-86 board IC001 ㉝	L	H	H	H	H	H	H
$\overline{\text{ATF LOCK}}$	I	SS-86 board IC001 ㉞		H	H	H	H	L	H
$\overline{\text{TS B}}$	O	SS-86 board IC001 ㊳	H	H	H	H	H	＊15	H
CAP BRK	O	SS-86 board IC001 ㊴	L	L	L	L	L	L	L
CAP FWD/$\overline{\text{RVS}}$	O	SS-86 board IC001 ㊵	H	H	L	H	L	H	H
SEL1	O	SS-86 board IC001 ㊺	L	L	L	＊18	＊19	＊15	＊
SEL2	O	SS-86 board IC001 ㊻	L	L	L	＊18	＊19	＊15	＊
SEL 16K/$\overline{\text{47K}}$	O	SS-86 board IC001 ㊼	L	L	L	＊18	＊19	＊15	＊
SLOW GAIN	O	SS-86 board IC001 ㊱	L	L	L	L	L	L	L

ection.

ection.

3-11. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE

Signal	I/O	Pin No.	VTR MODE													CAMERA MODE			
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB•PAUSE	FRAME	SLOW	REC	REC. PAUSE	STAND-BY	EDIT CUE	EDIT REV	REC
						CUE	REVIEW		CUE	REVIEW									
ATF ERR	I	SS-86 board IC001 ②		* 1	* 1	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 1			* 2	* 2	* 1
SWP DLY * 3	I	SS-86 board IC001 ③																	
D PWM	O	SS-86 board IC001 ⑤	L	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
C PWM	O	SS-86 board IC001 ⑥	L	* 5	* 5	* 5	* 5	* 5	* 5	* 5	L	* 5	* 5	* 5	L	L	* 5	* 5	* 5
D PG	I	SS-86 board IC001 ⑩	L	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6
RF SWP	O	SS-86 board IC001 ⑭	H/L	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7
REF V	I	SS-86 board IC001 ⑮	* 8	* 8	* 8	L	L	L	L	L	L	L	L	* 8	* 8	* 8	L	L	* 8
D FG	I	SS-86 board IC001 ⑰	H	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9
C FG	I	SS-86 board IC001 ⑱	H/L	* 10	* 10	* 11	* 12	* 13	* 11	* 12	H/L	* 14	* 14	* 13	H/L	H/L	* 13	* 13	* 13
CAP ON	O	SS-86 board IC001 ㉝	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{ATF LOCK}}$	I	SS-86 board IC001 ㉞		H	H	H	H	L	H	H	H	H	H	H	H	H	L	L	H
$\overline{\text{TS B}}$	O	SS-86 board IC001 ㊳	H	H	H	H	H	* 15	H	H	H	H	H	H	H	H	* 15	* 16	H
CAP BRK	O	SS-86 board IC001 ㊴	L	L	L	L	L	L	L	L	L	* 17	* 17	L	L	L	L	L	L
CAP FWD/$\overline{\text{RVS}}$	O	SS-86 board IC001 ㊵	H	H	L	H	L	H	H	L	H	H	H	H	H	H	H	L	H
SEL1	O	SS-86 board IC001 ㊺	L	L	L	* 18	* 19	* 15	* 18	* 19	H	* 20	* 20	* 21	L	L	* 15	* 16	* 21
SEL2	O	SS-86 board IC001 ㊻	L	L	L	* 18	* 19	* 15	* 18	* 19	H/L	* 20	* 20	* 21	H	H	* 15	* 16	* 21
SEL 16K/$\overline{\text{47K}}$	O	SS-86 board IC001 ㊼	L	L	L	* 18	* 19	* 15	* 18	* 19	L	* 20	* 20	L	L	L	* 15	* 16	L
SLOW GAIN	O	SS-86 board IC001 (56)	L	L	L	L	L	L	L	L	H	H	H	L	L	L	L	L	L

VTR mode										CAMERA mode			
F SEARCH		PB	PICTUER SEARCH		PB•PAUSE	FRAME	SLOW	REC	REC. PAUSE	STAND-BY	EDIT CUE	EDIT REVIEW	REC
	REVIEW		CUE	REVIEW									
	* 1	* 2	* 1	* 1	* 1	* 1	* 1	H	H	H	H	H	H
	L	H	L	L	L	L	L	H	H	H	L	L	H
	* 3	L	* 3	* 3	* 3	* 3	* 3	L	L	L	* 3	* 3	L
	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
	L	L	L	L	L	L	L	* 5	* 5	* 5	L	L	* 5
	* 6	* 6	* 6	* 6	* 6	* 6	* 6	H			* 6	* 6	H
	H	H	H	H	H	H	H	L	L	L	H	H	L
	L	L	L	L	L	L	L	L	L	L	L	L	L
	H	L	H	H	H	H	H	L	L	L	H	H	L
	H	H	H	H	H	H	H	H	H	* 7	* 7	* 7	* 7
	L	L	L	L	L	L	L	L	L	H	H	H	H
	H	H	H	H	H	H	H	L	H	H	H	H	L
	H	H	H	H	H	H	H	L	H	H	H	H	L
S990) is turuned ON.													
										"L" pulse series (CAMERA mode)			
										"L" pulse series (CAMERA mode)			
	L	L	L	L	L	L	L	L	L	* 8	* 8	* 8	* 8

* 7 V cycle pulse

* 8 2V cycle pulse series.

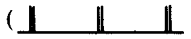
* 1 Fixed voltage approx. 2V DC.

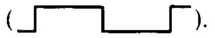
* 2 ATF error voltage

* 3 DC voltage set by RV002 is input.

* 4 43μsec cycle PWM wave. Duty ratio changes according to drum error signal.

* 5 43μsec cycle PWM wave. Duty ratio changes according to capstan error signal.

* 6 V cycle "H" pulse ()

* 7 30Hz 50% duty pulse (). Synchronized to drum rotation.

* 8 V cycle "L" pulse separated from line input video signal or camera video signal.

* 9 625Hz pulse

* 10 Approx. 16500Hz pulse

* 11 Approx. 8300Hz pulse (SP mode)

* 12 Approx. 7700Hz pulse (SP mode)

* 13 Approx. 1250Hz pulse (SP mode)

* 14 Pulse input during step-by-step

* 15 Refer to Timing Chart 1

* 16 Refer to Timing Chart 2

* 17 "H" pulse output during step-by-step

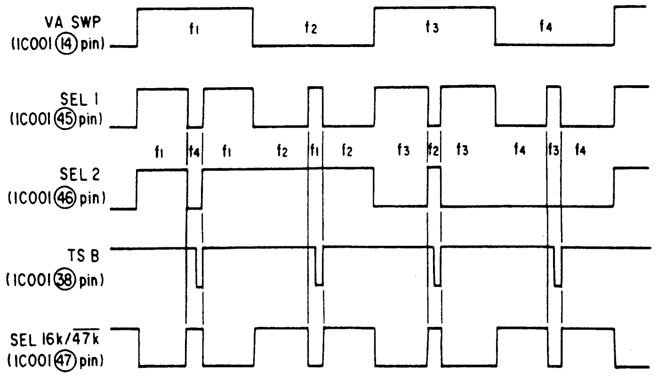
* 18 Refer to Timing Chart 3

* 19 Refer to Timing Chart 4

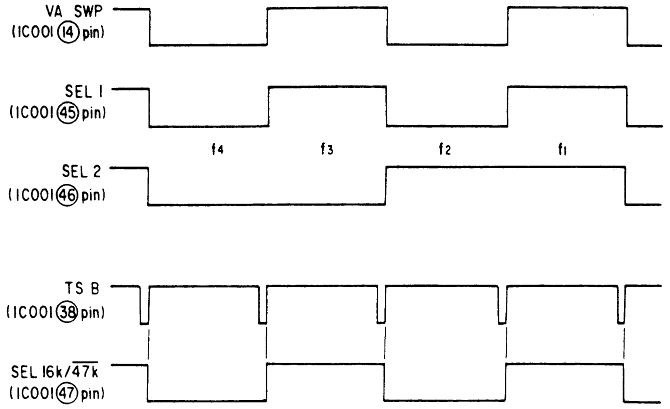
* 20 Pulse output during step-by-step

* 21 Refer to Timing Chart 5

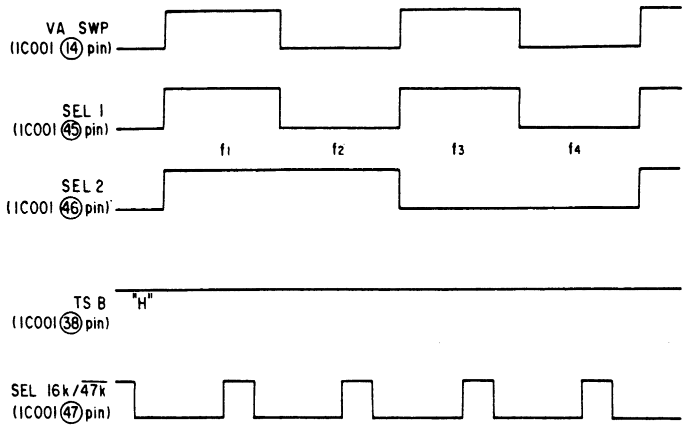
3-11-1. TIMING CHART 1 (PB, EDIT CUE)



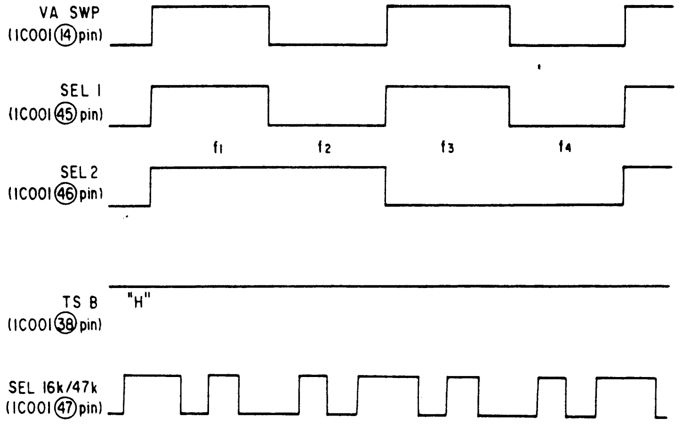
3-11-2. TIMING CHART 2 (EDIT REVIEW)



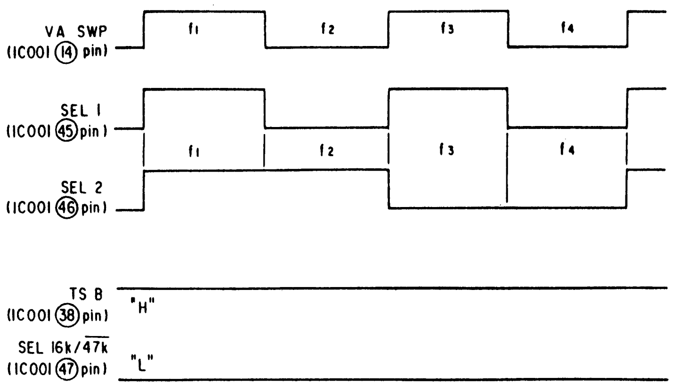
3-11-3. TIMING CHART 3 (CUE)



3-11-4. TIMING CHART 4 (REVIEW)



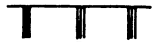
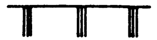
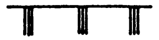
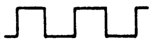
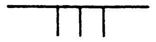
3-11-5. TIMING CHART 5 (REC)



3-12. SYSTEM CONTROL — PERIPHERAL CIRCUIT INTERFACE

<table>
<tr><th>Signal</th><th>I/O</th><th>Pin No.</th><th>Input/Output Level</th></tr>
<tr><td>DEW</td><td>I</td><td>SS-86 board IC001①</td><td>Dew sensor input. Input voltage increases when there is dew.</td></tr>
<tr><td>VA REF</td><td>I</td><td>SS-86 board IC001④</td><td>Reference voltage input (5V DC) for A-D conversion of pin (1) (DEW), pin
(ATF ERR) and pin (3) (SWP DLY) input analog voltage (0-5V DC).</td></tr>
<tr><td>CLK</td><td>I</td><td>SS-86 board IC001⑦</td><td>Clock input from serial data transmission mode control(FC-18boardIC1
V cycle "L" pulse ( ) in VTR mode.</td></tr>
<tr><td>DATA TO MASTER</td><td>O</td><td>SS-86 board IC001⑧</td><td>Serial data output to mode control.
V cycle "L" pulse ( ) in VTR mode.</td></tr>
<tr><td>DATA TO SLAVE</td><td>I</td><td>SS-86 board IC001⑨</td><td>Serial data input from mode control.
V cycle "L" pulse ( ) in VTR mode.</td></tr>
<tr><td>$\overline{\text{END SENS}}$</td><td>I</td><td>SS-86 board IC001⑲</td><td>TAPE END sensor (SS-86 board PH001) input.
"L" pulse input at tape end. Normally "H".</td></tr>
<tr><td>$\overline{\text{TOP SENS}}$</td><td>I</td><td>SS-86 board IC001㉑</td><td>TAPE TOP sensor (SS-86 board PH002) input.
"L" pulse input at tape top. Normally "H".</td></tr>
<tr><td>$\overline{\text{CS}}$</td><td>I</td><td>SS-86 board IC001㉒</td><td>Serial signal chip select signal input from mode control. V cycle pu
( ).</td></tr>
<tr><td>$\overline{\text{SLAVE RESET}}$</td><td>I</td><td>SS-86 board IC001㉓</td><td>Reset signal input from mode control.
Goes "L" when power is turned ON/OFF and servo/mechanism control (SS
board IC001) is reset.</td></tr>
<tr><td>$\overline{\text{T/E LED}}$</td><td>O</td><td>SS-86 board IC001㉛</td><td>Pulse output ( ) for lighting up T/E SENS LED (FP-53 bo
D302). REC/PB 100msec cycle. CUE/REVIEW 17msec cycle. FF/REW
3msec cycle. "L" when LED is lit up.</td></tr>
<tr><td>VTR POWER</td><td>O</td><td>SS-86 board IC001㉟</td><td>VTR power ON/OFF signal output.
"H" during VTR mode and CAMERA mode. Operates DC-DC conver
and generates VTR 5V.</td></tr>
<tr><td>CAM POWER</td><td>O</td><td>SS-86 board IC001㊱</td><td>Camera power ON/OFF signal output.
"H" during CAMERA mode. Operates DC-DC converter and genera
voltages used for camera.</td></tr>
<tr><td>LOAD</td><td>O</td><td>SS-86 board IC001㊶</td><td>"H" during cassette loading.</td></tr>
<tr><td>UNLOAD</td><td>O</td><td>SS-86 board IC001㊷</td><td>"H" during cassette eject.</td></tr>
<tr><td>$\overline{\text{REC PROOF}}$</td><td>I</td><td>SS-86 board IC001㊾</td><td>"H" when cassette which can not be recorded (erase prevention) is insert</td></tr>
<tr><td>M SW1</td><td>I</td><td>SS-86 board IC001㊿</td><td rowspan="3">Mode switch input for mechanism. Indicates mechanism position.
<table>
<tr><th>Mechanism position</th><th>READY</th><th>REC/PB/ CUE/REV/FF/REW</th><th>GL</th><th>STOP</th><th>EJECT</th><th>Mid-position</th></tr>
<tr><td>M SW1</td><td>L</td><td>H</td><td>H</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>M SW2</td><td>H</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>M SW3</td><td>H</td><td>L</td><td>L</td><td>H</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>M SW2</td><td>I</td><td>SS-86 board IC001(51)</td></tr>
<tr><td>M SW3</td><td>I</td><td>SS-86 board IC001(52)</td></tr>
<tr><td>V SO</td><td>O</td><td>SS-86 board IC001(53)</td><td>Video serial data output.</td></tr>
<tr><td>BATTERY LEVEL</td><td>I</td><td>SS-86 board IC001(62)</td><td>Main battery voltage level detection input.</td></tr>
<tr><td>T REEL FG</td><td>I</td><td>SS-86 board IC001(63)</td><td>T REEL FG (FP-53 board D304) input.
Pulse corresponds to S reel rotation.</td></tr>
<tr><td>S REEL FG</td><td>I</td><td>SS-86 board IC001(64)</td><td>S REEL FG (FP-53 board D303) input.
Pulse corresponds to S reel rotation.</td></tr>
</table>

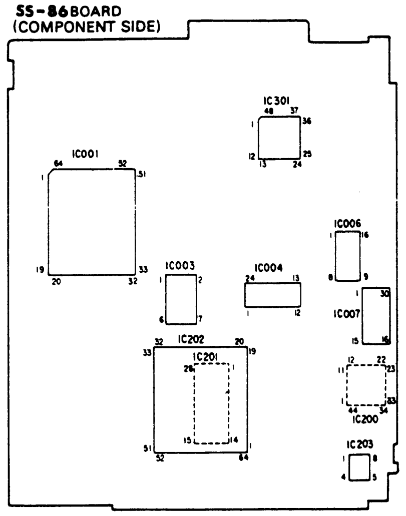
3-12. SYSTEM CONTROL – PERIPHERAL CIRCUIT INTERFACE

<table>
<tr><th>Signal</th><th>I/O</th><th>Pin No.</th><th>Input/Output Level</th></tr>
<tr><td>DEW</td><td>I</td><td>SS-86 board IC001①</td><td>Dew sensor input. Input voltage increases when there is dew.</td></tr>
<tr><td>VA REF</td><td>I</td><td>SS-86 board IC001④</td><td>Reference voltage input (5V DC) for A-D conversion of pin (1) (DEW), pin (2) (ATF ERR) and pin (3) (SWP DLY) input analog voltage (0-5V DC).</td></tr>
<tr><td>CLK</td><td>I</td><td>SS-86 board IC001⑦</td><td>Clock input from serial data transmission mode control(FC-18boardIC190).
V cycle "L" pulse () in VTR mode.</td></tr>
<tr><td>DATA TO MASTER</td><td>O</td><td>SS-86 board IC001⑧</td><td>Serial data output to mode control.
V cycle "L" pulse () in VTR mode.</td></tr>
<tr><td>DATA TO SLAVE</td><td>I</td><td>SS-86 board IC001⑨</td><td>Serial data input from mode control.
V cycle "L" pulse () in VTR mode.</td></tr>
<tr><td>$\overline{\text{END SENS}}$</td><td>I</td><td>SS-86 board IC001⑲</td><td>TAPE END sensor (SS-86 board PH001) input.
"L" pulse input at tape end. Normally "H" .</td></tr>
<tr><td>$\overline{\text{TOP SENS}}$</td><td>I</td><td>SS-86 board IC001㉑</td><td>TAPE TOP sensor (SS-86 board PH002) input.
"L" pulse input at tape top. Normally "H" .</td></tr>
<tr><td>$\overline{\text{CS}}$</td><td>I</td><td>SS-86 board IC001㉒</td><td>Serial signal chip select signal input from mode control. V cycle pulse ().</td></tr>
<tr><td>$\overline{\text{SLAVE RESET}}$</td><td>I</td><td>SS-86 board IC001㉓</td><td>Reset signal input from mode control.
Goes "L" when power is turned ON/OFF and servo/mechanism control (SS-86 board IC001) is reset.</td></tr>
<tr><td>$\overline{\text{T/E LED}}$</td><td>O</td><td>SS-86 board IC001㉛</td><td>Pulse output () for lighting up T/E SENS LED (FP-53 board D302). REC/PB 100msec cycle. CUE/REVIEW 17msec cycle. FF/REW 3msec cycle. "L" when LED is lit up.</td></tr>
<tr><td>VTR POWER</td><td>O</td><td>SS-86 board IC001㉟</td><td>VTR power ON/OFF signal output.
"H" during VTR mode and CAMERA mode. Operates DC-DC converter, and generates VTR 5V.</td></tr>
<tr><td>CAM POWER</td><td>O</td><td>SS-86 board IC001㊱</td><td>Camera power ON/OFF signal output.
"H" during CAMERA mode. Operates DC-DC converter and generates voltages used for camera.</td></tr>
<tr><td>LOAD</td><td>O</td><td>SS-86 board IC001㊶</td><td>"H" during cassette loading.</td></tr>
<tr><td>UNLOAD</td><td>O</td><td>SS-86 board IC001㊷</td><td>"H" during cassette eject.</td></tr>
<tr><td>$\overline{\text{REC PROOF}}$</td><td>I</td><td>SS-86 board IC001㊾</td><td>"H" when cassette which can not be recorded (erase prevention) is inserted.</td></tr>
<tr><td>M SW1</td><td>I</td><td>SS-86 board IC001㊿</td><td rowspan="3">Mode switch input for mechanism. Indicates mechanism position.
<table>
<tr><th>Mechanism position</th><th>READY</th><th>REC/PB/ CUE/REV/FF/REW</th><th>GL</th><th>STOP</th><th>EJECT</th><th>Mid-position</th></tr>
<tr><td>M SW1</td><td>L</td><td>H</td><td>H</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>M SW2</td><td>H</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>M SW3</td><td>H</td><td>L</td><td>L</td><td>H</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>M SW2</td><td>I</td><td>SS-86 board IC001(51)</td></tr>
<tr><td>M SW3</td><td>I</td><td>SS-86 board IC001(52)</td></tr>
<tr><td>V SO</td><td>O</td><td>SS-86 board IC001(53)</td><td>Video serial data output.</td></tr>
<tr><td>BATTERY LEVEL</td><td>I</td><td>SS-86 board IC001(62)</td><td>Main battery voltage level detection input.</td></tr>
<tr><td>T REEL FG</td><td>I</td><td>SS-86 board IC001(63)</td><td>T REEL FG (FP-53 board D304) input.
Pulse corresponds to S reel rotation.</td></tr>
<tr><td>S REEL FG</td><td>I</td><td>SS-86 board IC001(64)</td><td>S REEL FG (FP-53 board D303) input.
Pulse corresponds to S reel rotation.</td></tr>
</table>

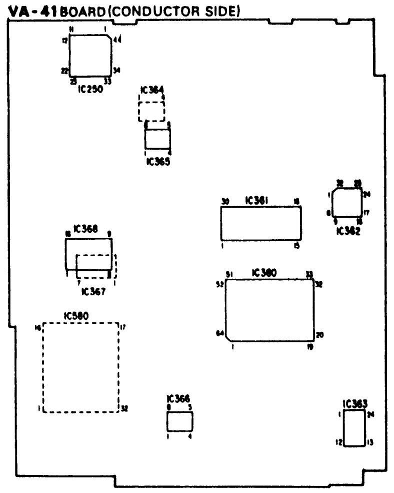
3-13. AUDIO BLOCK DIAGRAM

- ( ) near the board name indicates the schematic diagram page.

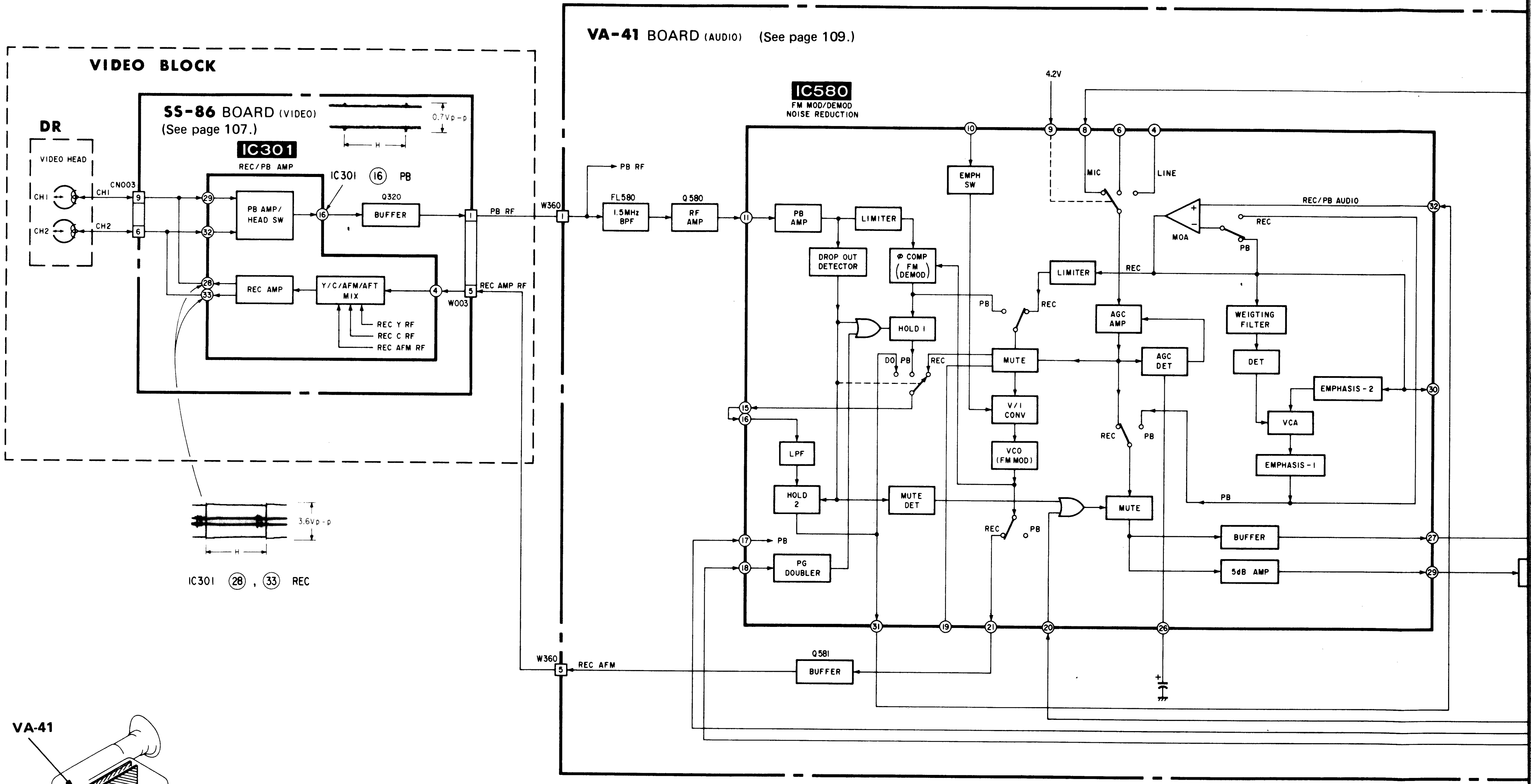
SS-86BOARD (COMPONENT SIDE)

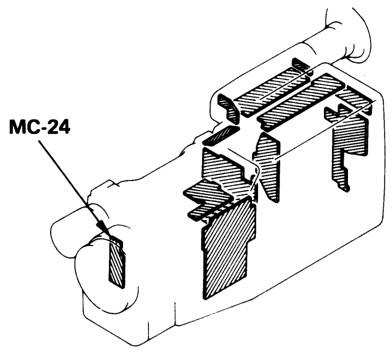

IC301
IC001
IC003
IC004
IC006
IC007
IC202
IC201
IC200
IC203

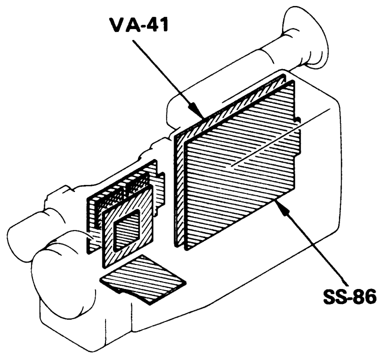
VA-41BOARD(CONDUCTOR SIDE)

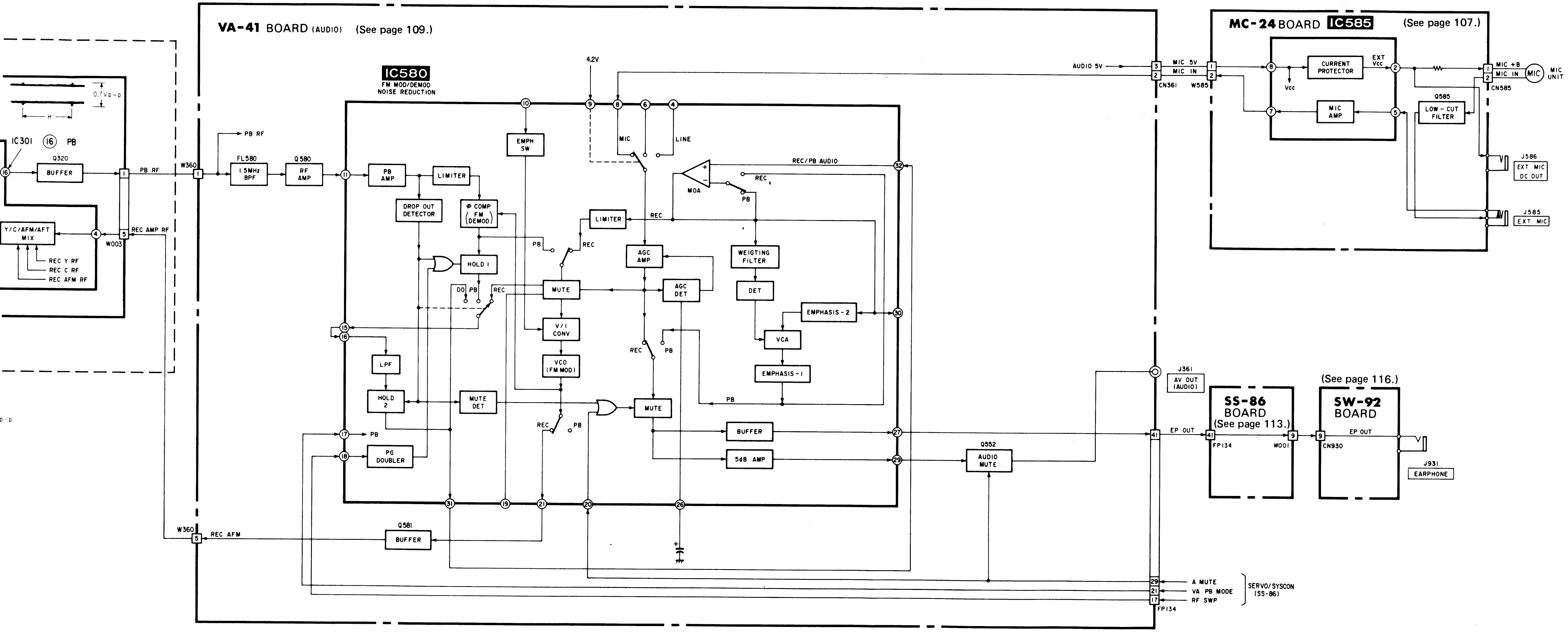

IC250
IC364
IC365
IC361
IC362
IC368
IC367
IC380
IC580
IC366
IC363

- Components on the rear side indicated by "- - -" line.


VIDEO BLOCK
DR
VIDEO HEAD
CH1
CH2
CN003
SS-86 BOARD (VIDEO)
(See page 107.)
0.7Vp-p
H
IC301
REC/PB AMP
PB AMP/
HEAD SW
IC301 ⑯ PB
Q320
BUFFER
REC AMP
Y/C/AFM/AFT
MIX
REC Y RF
REC C RF
REC AFM RF
PB RF
REC AMP RF
W003
3.6Vp-p
IC301 ㉘, ㉝ REC
VA-41 BOARD (AUDIO) (See page 109.)
W360
PB RF
FL580
1.5MHz
BPF
Q580
RF
AMP
IC580
FM MOD/DEMOD
NOISE REDUCTION
4.2V
PB
AMP
LIMITER
DROP OUT
DETECTOR
φ COMP
(FM
DEMOD)
HOLD 1
DO
PB
REC
EMPH
SW
MIC
LINE
REC/PB AUDIO
MOA
REC
PB
LIMITER
AGC
AMP
AGC
DET
MUTE
V/I
CONV
VCO
(FM MOD)
WEIGTING
FILTER
DET
EMPHASIS - 2
VCA
EMPHASIS - 1
LPF
HOLD
2
MUTE
DET
MUTE
BUFFER
5dB AMP
PG
DOUBLER
REC AFM
Q581
BUFFER

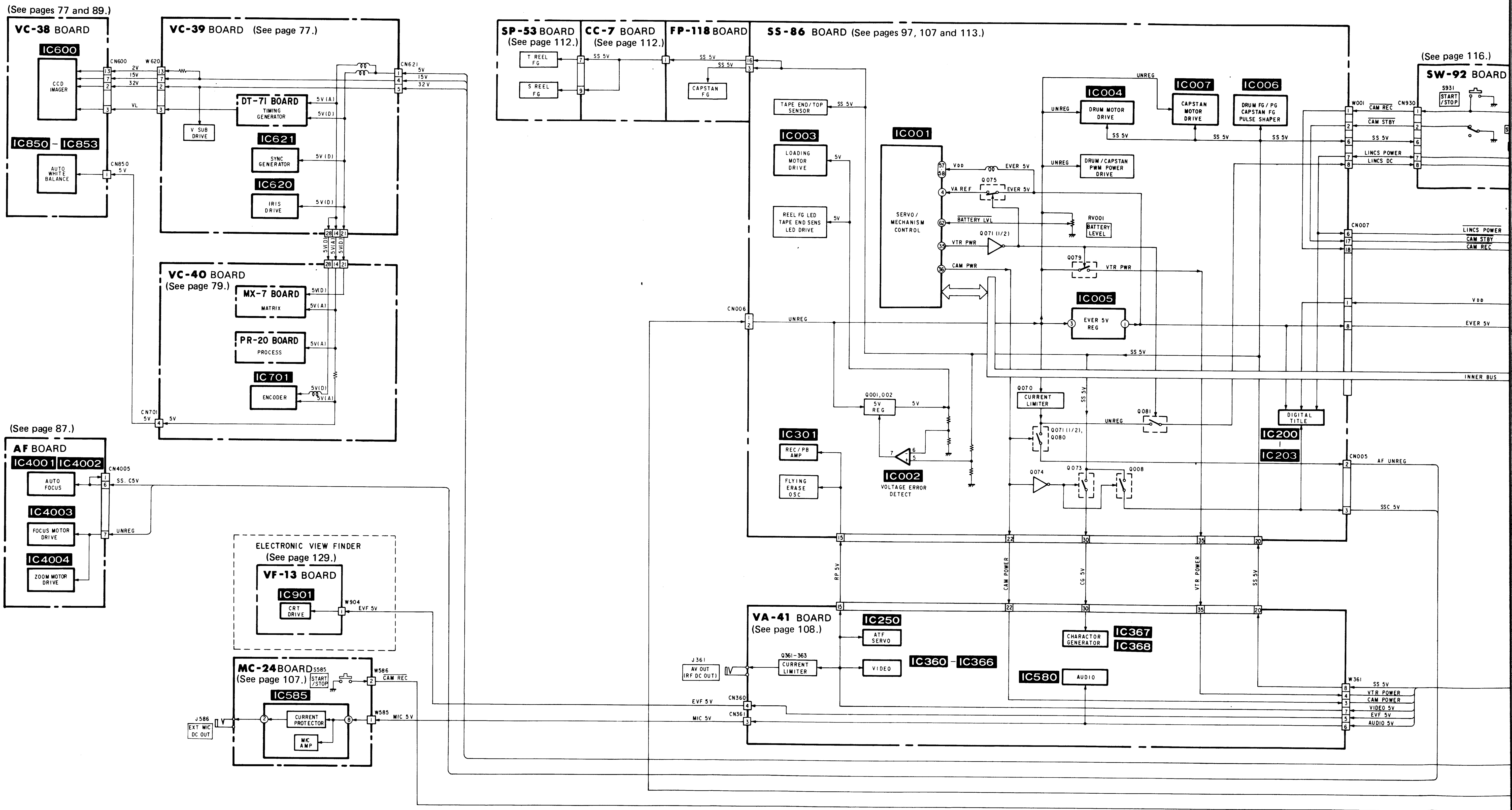


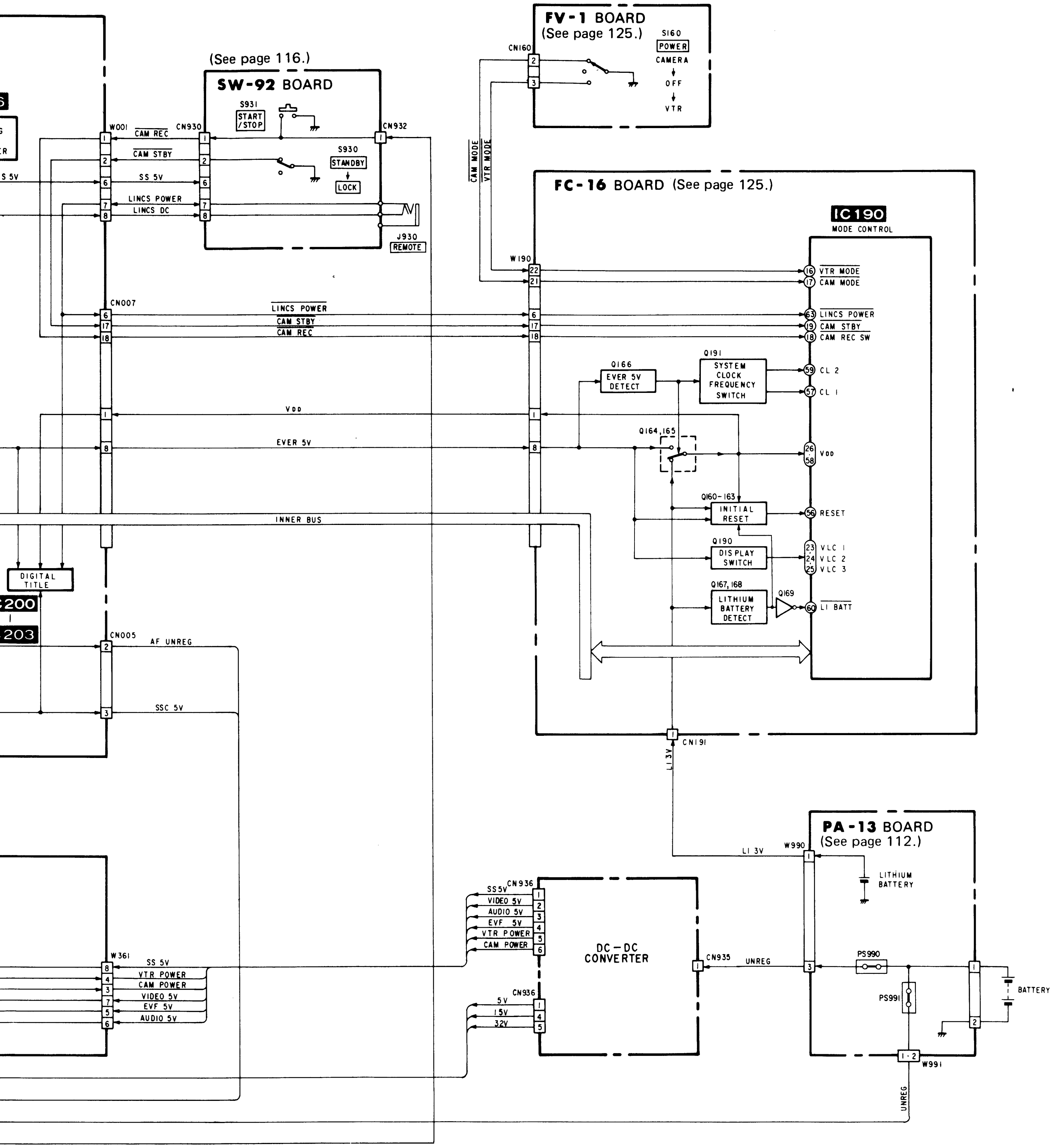



VA-41 BOARD (AUDIO) (See page 109.)
IC580
FM MOD/DEMOD
NOISE REDUCTION
0.7Vp-p
H
IC301 ⑯ PB
Q320
BUFFER
PB RF
W360
W003
REC AMP RF
Y/C/AFM/AFT MIX
REC Y RF
REC C RF
REC AFM RF
p-p
PB RF
FL580
1.5MHz BPF
Q580
RF AMP
PB AMP
LIMITER
DROP OUT DETECTOR
Φ COMP (FM DEMOD)
HOLD 1
DO
PB
REC
EMPH SW
4.2V
MIC
LINE
REC/PB AUDIO
MOA
REC
PB
LIMITER
REC
AGC AMP
AGC DET
MUTE
V/I CONV
VCO (FM MOD)
WEIGTING FILTER
DET
EMPHASIS-2
VCA
EMPHASIS-1
LPF
HOLD 2
MUTE DET
PG DOUBLER
MUTE
BUFFER
5dB AMP
Q552
AUDIO MUTE
Q581
BUFFER
REC AFM
AUDIO 5V
MIC 5V
MIC IN
CN361
W585
J361
AV OUT (AUDIO)
EP OUT
FP134
A MUTE
VA PB MODE
RF SWP
SERVO/SYSCON (SS-86)
MC-24 BOARD IC585 (See page 107.)
CURRENT PROTECTOR
EXT Vcc
Vcc
MIC AMP
Q585
LOW-CUT FILTER
MIC +B
MIC IN
MIC
MIC UNIT
CN585
J586
EXT MIC DC OUT
J585
EXT MIC
SS-86 BOARD (See page 113.)
W001
(See page 116.)
SW-92 BOARD
CN930
EP OUT
J931
EARPHONE

3-14. POWER SUPPLY BLOCK DIAGRAM

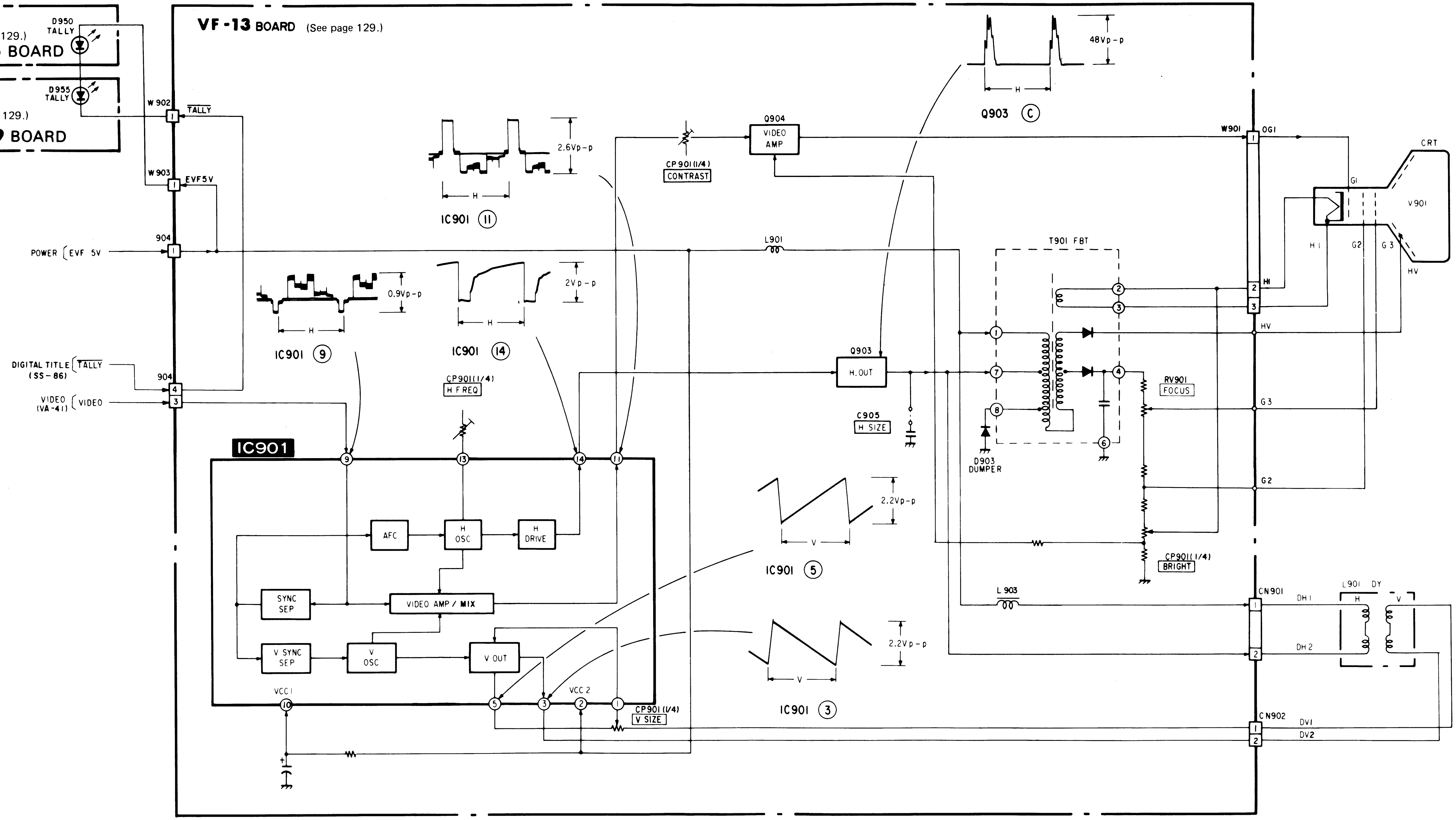
- ( ) near the board name indicates the schematic diagram page.


(See pages 77 and 89.)
VC-38 BOARD
IC600
CCD IMAGER
IC850 - IC853
AUTO WHITE BALANCE
CN600
CN850 5V
VC-39 BOARD (See page 77.)
W620
2V
15V
32V
VL
V SUB DRIVE
DT-71 BOARD
TIMING GENERATOR
IC621
SYNC GENERATOR
IC620
IRIS DRIVE
5V(A)
5V(D)
CN621
5V
15V
32V
VC-40 BOARD (See page 79.)
MX-7 BOARD
MATRIX
PR-20 BOARD
PROCESS
IC701
ENCODER
CN701 5V
(See page 87.)
AF BOARD
IC4001 IC4002
AUTO FOCUS
IC4003
FOCUS MOTOR DRIVE
IC4004
ZOOM MOTOR DRIVE
CN4005
SS. C5V
UNREG
ELECTRONIC VIEW FINDER (See page 129.)
VF-13 BOARD
IC901
CRT DRIVE
W904
EVF 5V
MC-24 BOARD (See page 107.)
S585
START /STOP
IC585
CURRENT PROTECTOR
MIC AMP
W586
CAM REC
W585
MIC 5V
J586
EXT MIC DC OUT
SP-53 BOARD (See page 112.)
T REEL FG
S REEL FG
CC-7 BOARD (See page 112.)
SS 5V
FP-118 BOARD
CAPSTAN FG
SS-86 BOARD (See pages 97, 107 and 113.)
TAPE END/TOP SENSOR
IC003
LOADING MOTOR DRIVE
REEL FG LED TAPE END SENS LED DRIVE
IC001
SERVO/ MECHANISM CONTROL
VDD
EVER 5V
VA REF
Q075
BATTERY LVL
Q071 (1/2)
VTR PWR
CAM PWR
IC004
DRUM MOTOR DRIVE
DRUM/CAPSTAN PWM POWER DRIVE
IC007
CAPSTAN MOTOR DRIVE
IC006
DRUM FG/PG CAPSTAN FG PULSE SHAPER
RV001 BATTERY LEVEL
Q079
IC005
EVER 5V REG
CN006
Q001,002
5V REG
IC002
VOLTAGE ERROR DETECT
IC301
REC/PB AMP
FLYING ERASE OSC
Q070
CURRENT LIMITER
Q071 (1/2), Q080
Q081
Q074
Q073
Q008
DIGITAL TITLE
IC200 | IC203
CN007
CN005
AF UNREG
SSC 5V
INNER BUS
RP 5V
CAM POWER
CG 5V
VTR POWER
SS 5V
(See page 116.)
SW-92 BOARD
S931
START /STOP
W001
CN930
CAM REC
CAM STBY
LINCS POWER
LINCS DC
VDD
EVER 5V
VA-41 BOARD (See page 108.)
IC250
ATF SERVO
Q361-363
CURRENT LIMITER
VIDEO
IC360 - IC366
CHARACTOR GENERATOR
IC367
IC368
IC580
AUDIO
J361
AV OUT (RF DC OUT)
EVF 5V
MIC 5V
CN360
CN361
W361
VTR POWER
CAM POWER
VIDEO 5V
EVF 5V
AUDIO 5V


FV-1 BOARD
(See page 125.)
CN160
S160
POWER
CAMERA
OFF
VTR
(See page 116.)
SW-92 BOARD
S931
START
/STOP
S930
STANDBY
LOCK
CN930
CN932
J930
REMOTE
W001
CAM REC
CAM STBY
SS 5V
LINCS POWER
LINCS DC
CAM MODE
VTR MODE
FC-16 BOARD (See page 125.)
IC190
MODE CONTROL
W190
VTR MODE
CAM MODE
CN007
LINCS POWER
CAM STBY
CAM REC
CAM REC SW
Q166
EVER 5V
DETECT
Q191
SYSTEM
CLOCK
FREQUENCY
SWITCH
CL 2
CL 1
VDD
EVER 5V
Q164,165
Q160-163
INITIAL
RESET
RESET
Q190
DISPLAY
SWITCH
VLC 1
VLC 2
VLC 3
Q167,168
LITHIUM
BATTERY
DETECT
Q169
LI BATT
INNER BUS
DIGITAL
TITLE
200
203
CN005
AF UNREG
SSC 5V
CN191
LI 3V
PA-13 BOARD
(See page 112.)
W990
LITHIUM
BATTERY
PS990
PS991
BATTERY
W991
UNREG
CN936
SS5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
5V
15V
32V
DC-DC
CONVERTER
CN935
UNREG
W361
SS 5V
VTR POWER
CAM POWER
VIDEO 5V
EVF 5V
AUDIO 5V

3-15. VIEWFINDER BLOCK DIAGRAM

- ( ) near the board name indicates the schematic diagram page.



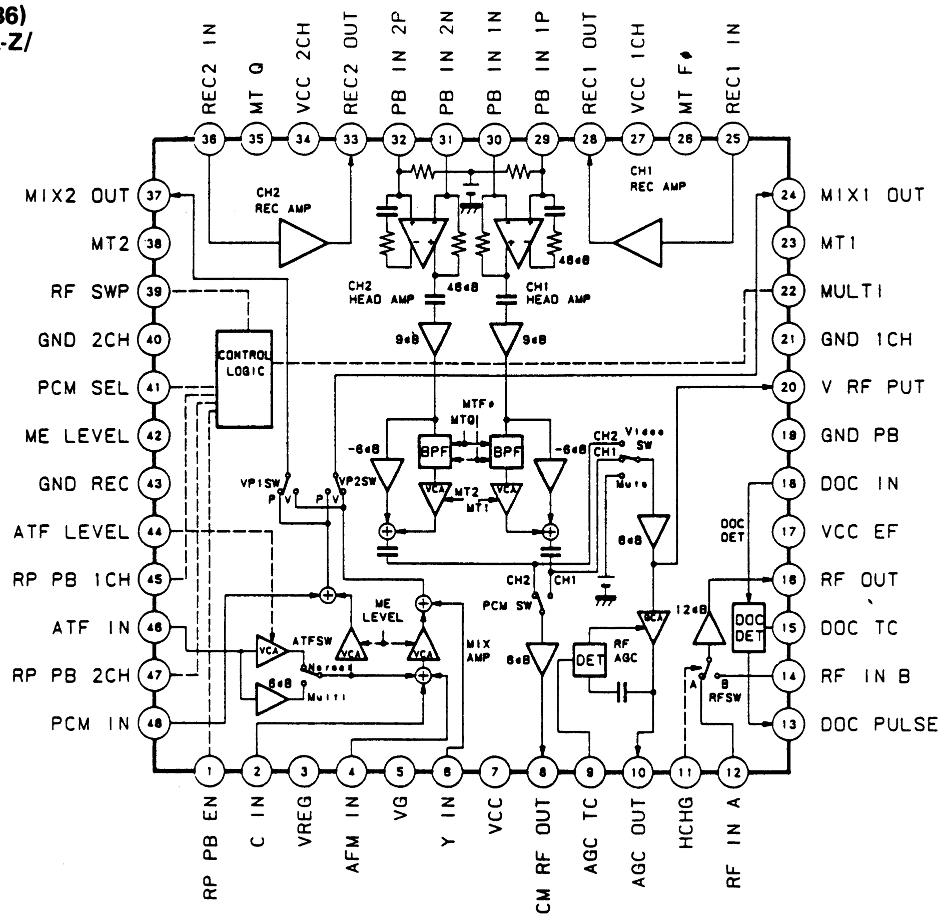
(See page 129.)
TL-18 BOARD
D950 TALLY
D955 TALLY
(See page 129.)
TL-19 BOARD
VF-13 BOARD (See page 129.)
W902
TALLY
W903
EVF5V
904
POWER EVF 5V
DIGITAL TITLE (SS-86) TALLY
VIDEO (VA-41) VIDEO
IC901 ⑪
2.6Vp-p
H
IC901 ⑨
0.9Vp-p
H
IC901 ⑭
2Vp-p
H
CP901(1/4) H FREQ
CP901(1/4) CONTRAST
Q904 VIDEO AMP
L901
Q903 H. OUT
C905 H SIZE
Q903 Ⓒ
48Vp-p
H
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP / MIX
V SYNC SEP
V OSC
V OUT
VCC1
VCC2
CP901(1/4) V SIZE
IC901 ⑤
2.2Vp-p
V
IC901 ③
2.2Vp-p
V
T901 FBT
D903 DUMPER
RV901 FOCUS
CP901(1/4) BRIGHT
L903
W901
OG1
H1
HV
G3
G2
CRT
G1
V901
H1
G2
G3
HV
CN901
DH1
DH2
L901 DY
H
V
CN902
DV1
DV2

SECTION 4

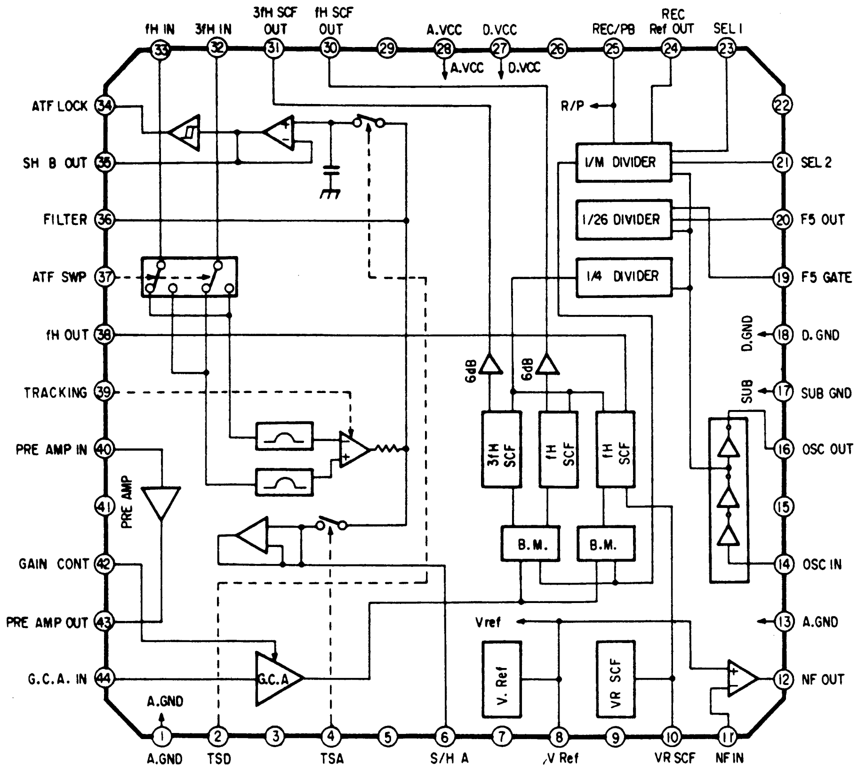
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

- **VIDEO/AUDIO BLOCK IC BLOCK DIAGRAMS**

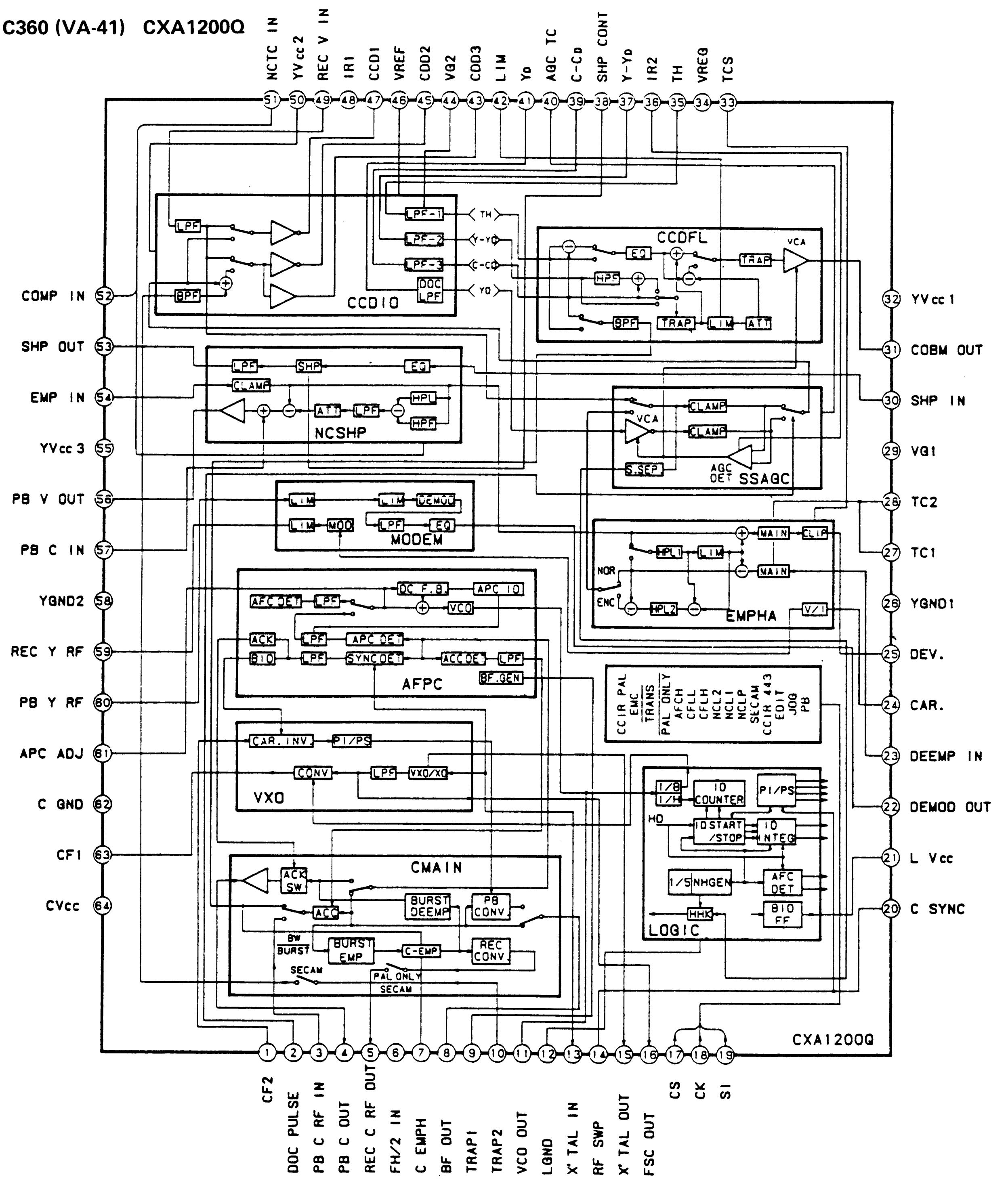
IC301 (SS-86)
CXA1202Q-Z/
CXA1202R


REC2 IN
MT Q
VCC 2CH
REC2 OUT
PB IN 2P
PB IN 2N
PB IN 1N
PB IN 1P
REC1 OUT
VCC 1CH
MT F
REC1 IN
MIX2 OUT
MT2
RF SWP
GND 2CH
PCM SEL
ME LEVEL
GND REC
ATF LEVEL
RP PB 1CH
ATF IN
RP PB 2CH
PCM IN
MIX1 OUT
MT1
MULTI
GND 1CH
V RF PUT
GND PB
DOC IN
VCC EF
RF OUT
DOC TC
RF IN B
DOC PULSE
RP PB EN
C IN
VREG
AFM IN
VG
Y IN
VCC
PCM RF OUT
AGC TC
AGC OUT
HCHG
RF IN A
CH2 REC AMP
CH1 REC AMP
CH2 HEAD AMP
CH1 HEAD AMP
CONTROL LOGIC
BPF
VCA
MIX AMP
DET
DOC DET
RF AGC
ME LEVEL
RFSW
ATFSW

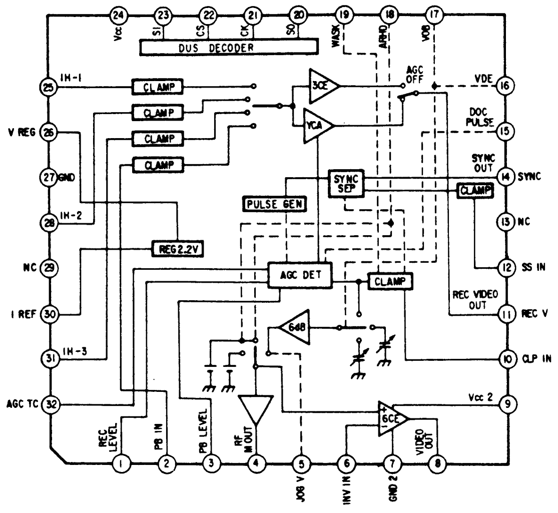
IC250 (VA-41)
CXA1204Q


fH IN
3fH IN
3fH SCF OUT
fH SCF OUT
A.VCC
D.VCC
REC/PB
REC Ref OUT
SEL1
ATF LOCK
SH B OUT
FILTER
ATF SWP
fH OUT
TRACKING
PRE AMP IN
GAIN CONT
PRE AMP OUT
G.C.A. IN
SEL 2
F5 OUT
F5 GATE
D.GND
SUB GND
OSC OUT
OSC IN
A.GND
NF OUT
A.GND
TSD
TSA
S/H A
V Ref
VR SCF
NF IN
1/M DIVIDER
1/26 DIVIDER
1/4 DIVIDER
3fH SCF
fH SCF
B.M.
V. Ref
VR SCF
PRE AMP
G.C.A
R/P
Vref

IC360 (VA-41) CXA1200Q


NCTC IN
YVcc2
REC V IN
IR1
CCD1
VREF
CDD2
VG2
CDD3
LIM
Yo
AGC TC
C-Co
SHP CONT
Y-Yo
IR2
TH
VREG
TCS
COMP IN
SHP OUT
EMP IN
YVcc 3
PB V OUT
PB C IN
YGND2
REC Y RF
PB Y RF
APC ADJ
C GND
CF1
CVcc
YVcc 1
COBM OUT
SHP IN
VG1
TC2
TC1
YGND1
DEV.
CAR.
DEEMP IN
DEMOD OUT
L Vcc
C SYNC
CF2
DOC PULSE
PB C RF IN
PB C OUT
REC C RF OUT
FH/2 IN
C EMPH
BF OUT
TRAP1
TRAP2
VCO OUT
LGND
X'TAL IN
RF SWP
X'TAL OUT
FSC OUT
CS
CK
SI
CCDIO
CCDFL
NCSHP
SSAGC
MODEM
EMPHA
AFPC
VXO
CMAIN
LOGIC
CXA1200Q

IC362 (VA-41)
CXA1201Q


DUS DECODER
CLAMP
REG2.2V
AGC DET
SYNC SEP
PULSE GEN
VDE
DOC PULSE
SYNC OUT
SYNC
NC
SS IN
REC VIDEO OUT
REC V
CLP IN
Vcc 2
V REG
GND
NC
I REF
AGC TC
REC LEVEL
PB IN
PB LEVEL
RF MOUT
JOG V
INV IN
GND 2
VIDEO OUT

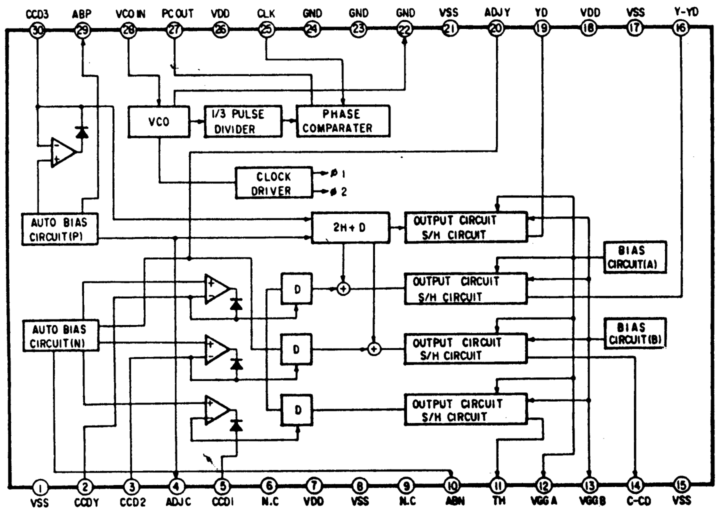
4-1. FRAME SCHEMATIC DIAGRAM

When indicating parts by reference number, please include the board name.

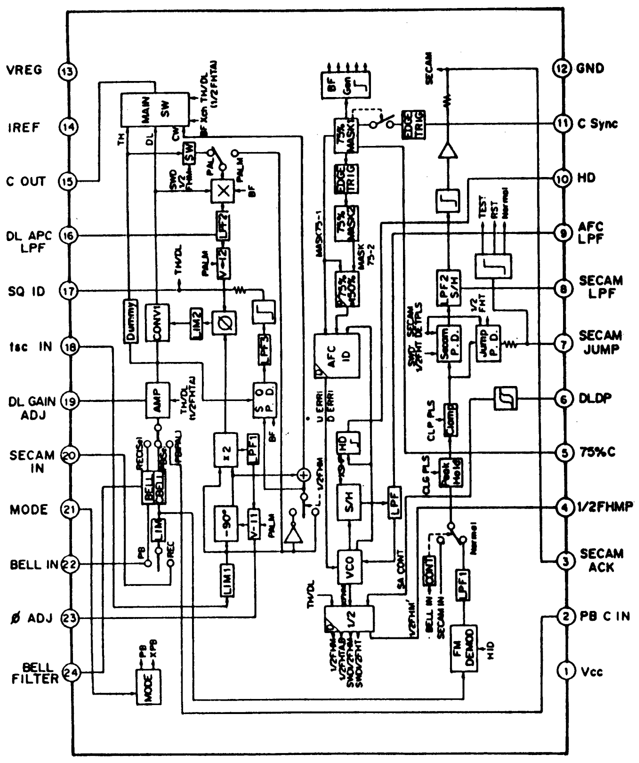
Precautions for replacement of CCD imager block.

- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

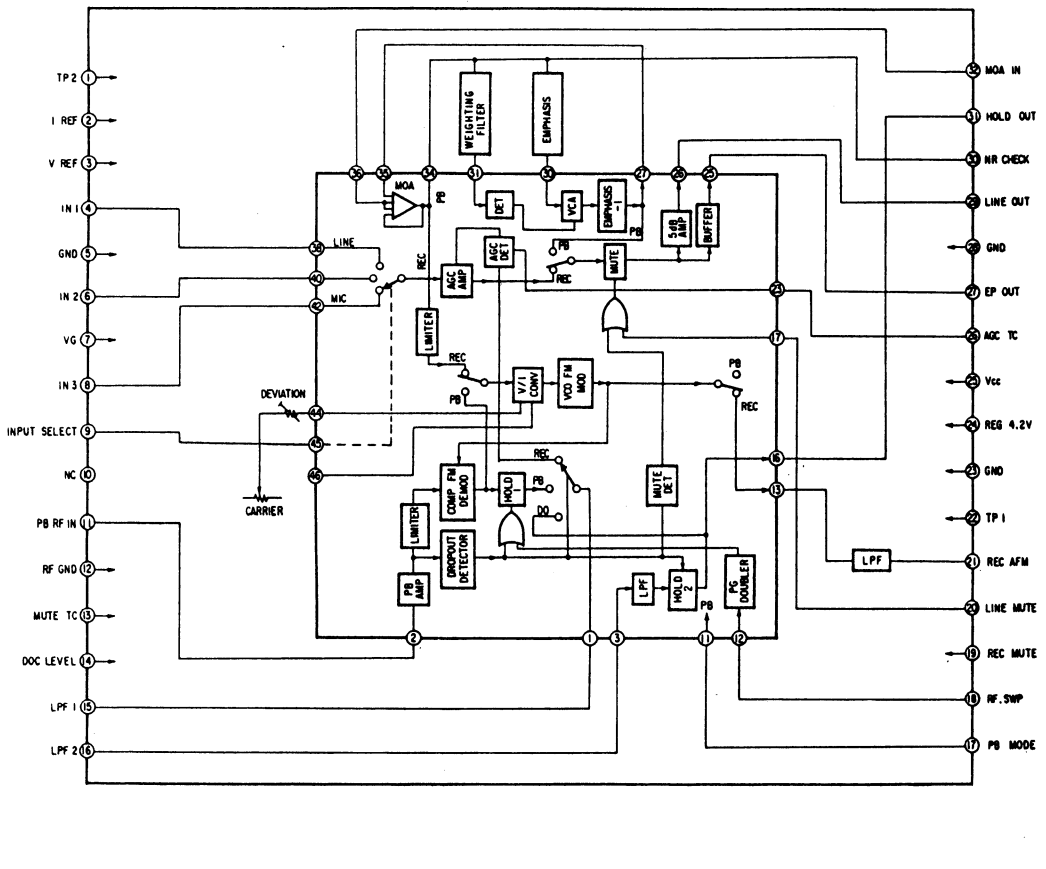
IC361 (VA-41) CXL1502

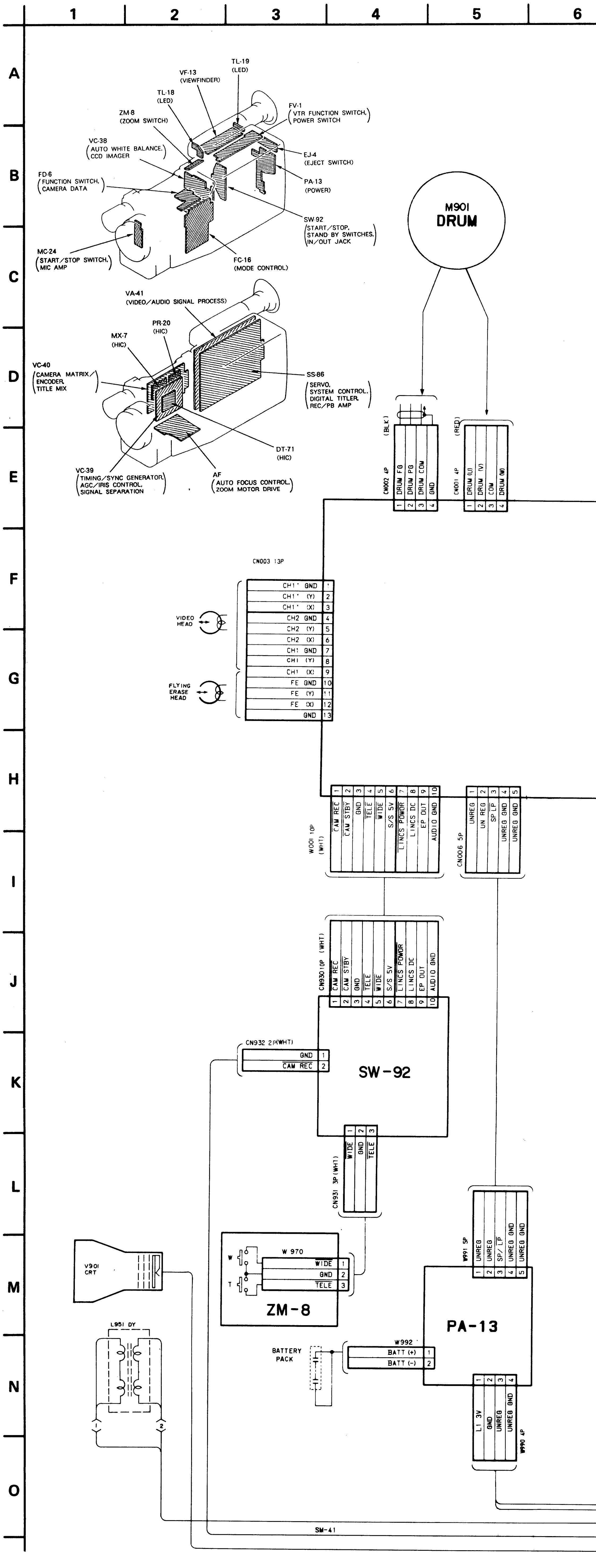

CCD3 30
ABP 29
VCO IN 28
PC OUT 27
VDD 26
CLK 25
GND 24
GND 23
GND 22
VSS 21
ADJY 20
YD 19
VDD 18
VSS 17
Y-YD 16
VCO
1/3 PULSE DIVIDER
PHASE COMPARATER
CLOCK DRIVER
ø1
ø2
AUTO BIAS CIRCUIT(P)
AUTO BIAS CIRCUIT(N)
2H+D
D
OUTPUT CIRCUIT S/H CIRCUIT
BIAS CIRCUIT(A)
BIAS CIRCUIT(B)
1 VSS
2 CCDY
3 CCD2
4 ADJC
5 CCDI
6 N.C
7 VDD
8 VSS
9 N.C
10 ABN
11 TH
12 VGGA
13 VGGB
14 C-CD
15 VSS

IC363 (VA-41) CXA1203M

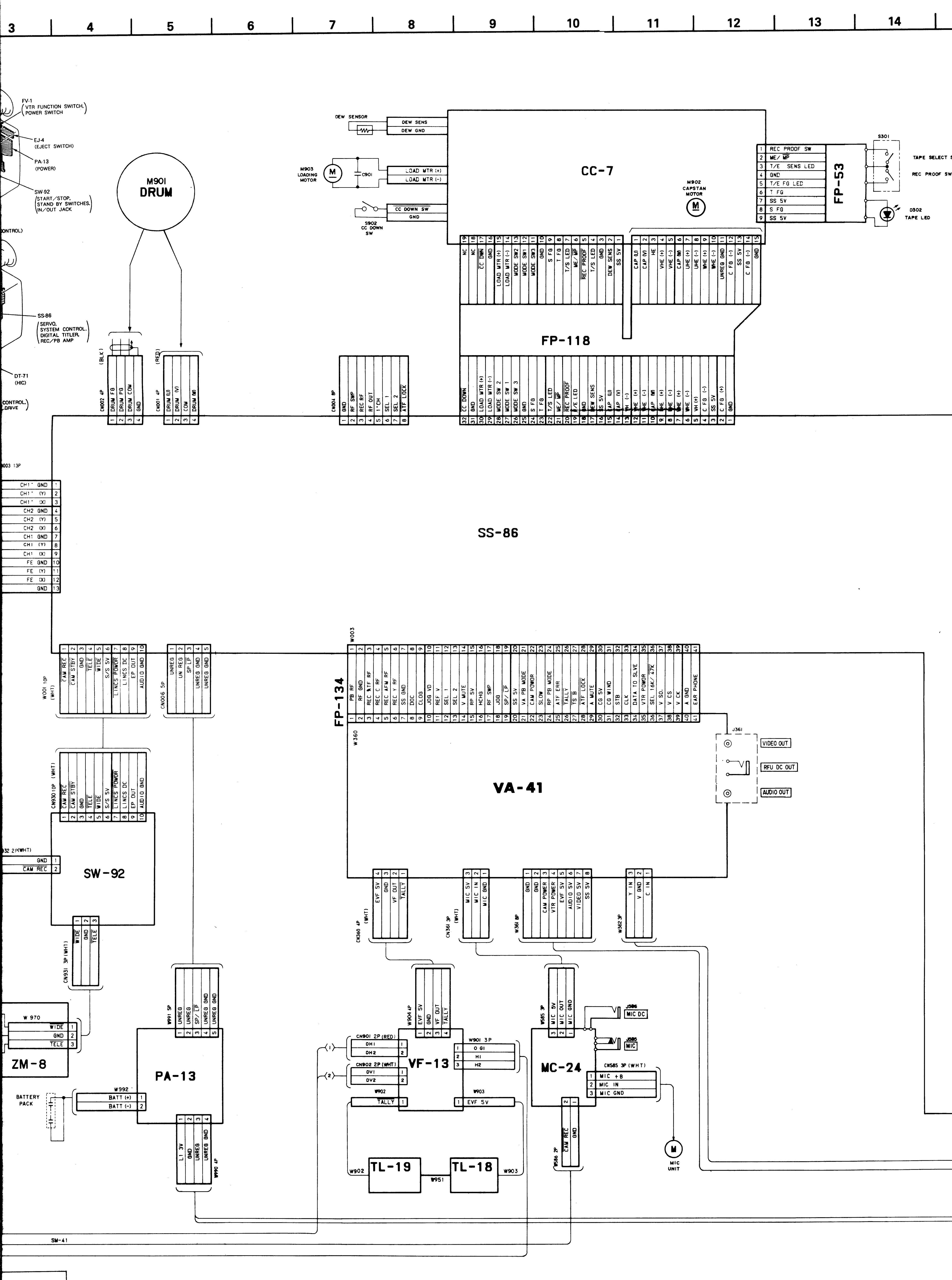

VREG 13
IREF 14
C OUT 15
DL APC LPF 16
SQ ID 17
fsc IN 18
DL GAIN ADJ 19
SECAM IN 20
MODE 21
BELL IN 22
ø ADJ 23
BELL FILTER 24
12 GND
11 C Sync
10 HD
9 AFC LPF
8 SECAM LPF
7 SECAM JUMP
6 DLDP
5 75%C
4 1/2FHMP
3 SECAM ACK
2 PB C IN
1 Vcc
MAIN SW
TH
DL
PAL
BF
LPF
CONV
AMP
BELL
LIM
LIM1
x2
-90°
S/H
AFC ID
VCO
1/2
FM DEMOD
EDGE TRIG
75% MASK
SECAM
TEST
Normal
SA CONT
MODE

IC580 (VA-41) SBX1505-01/21

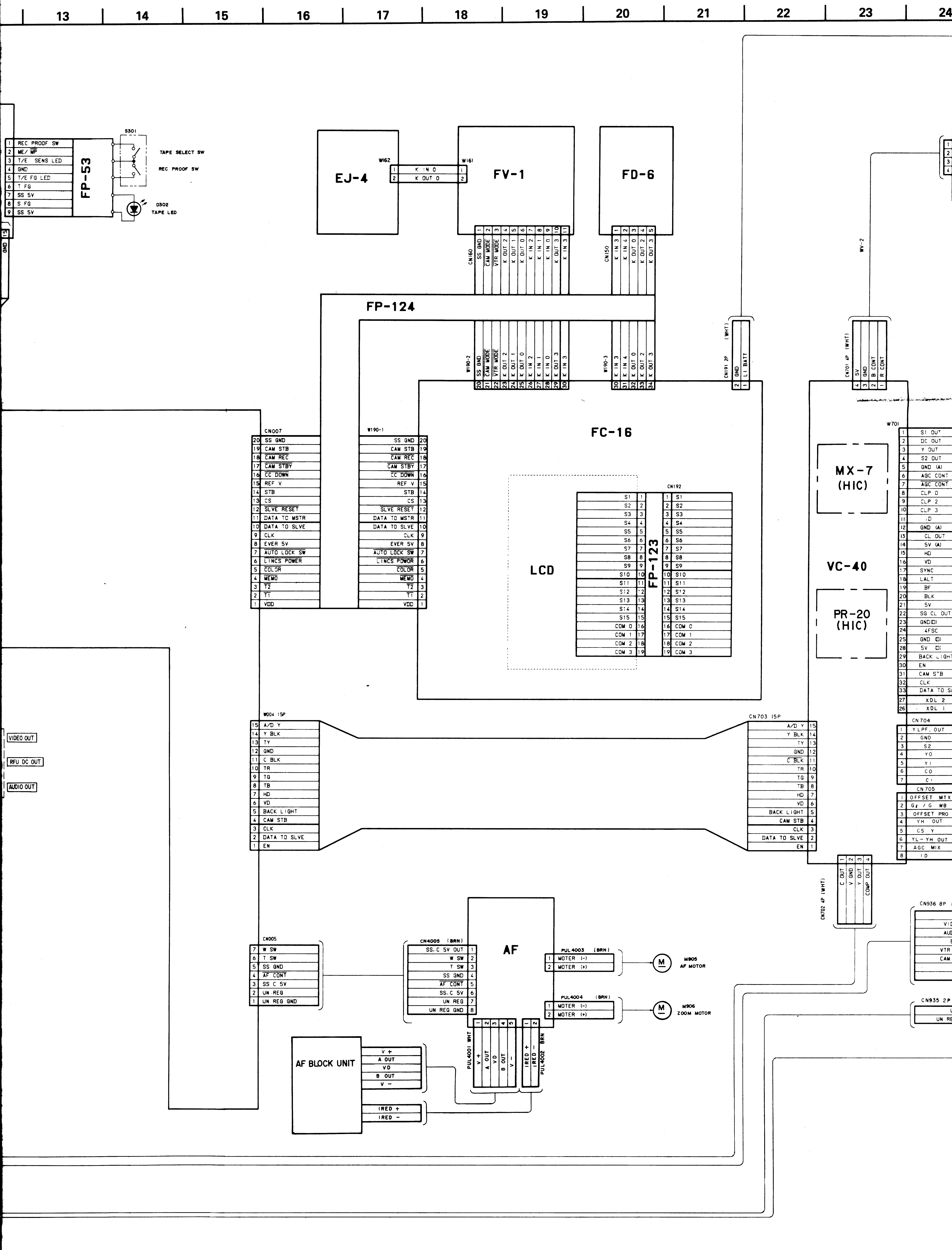

TP2 1
I REF 2
V REF 3
IN 1 4
GND 5
IN 2 6
VG 7
IN 3 8
INPUT SELECT 9
NC 10
PB RF IN 11
RF GND 12
MUTE TC 13
DOC LEVEL 14
LPF 1 15
LPF 2 16
32 MOA IN
31 HOLD OUT
30 NR CHECK
29 LINE OUT
28 GND
27 EP OUT
26 AGC TC
25 Vcc
24 REG 4.2V
23 GND
22 TP1
21 REC AFM
20 LINE MUTE
19 REC MUTE
18 RF.SWP
17 PB MODE
WEIGHTING FILTER
EMPHASIS
MOA
LINE
MIC
REC
PB
DET
VCA
EMPHASIS
5dB AMP
BUFFER
AGC AMP
AGC DET
MUTE
LIMITER
V/I CONV
VCO FM MOD
DEVIATION
CARRIER
COMP FM DEMOD
HOLD
MUTE DET
LIMITER
DROPOUT DETECTOR
PB AMP
LPF
HOLD 2
PG DOUBLER


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
TL-19 (LED)
VF-13 (VIEWFINDER)
TL-18 (LED)
ZM-8 (ZOOM SWITCH)
FV-1 (VTR FUNCTION SWITCH, POWER SWITCH)
VC-38 (AUTO WHITE BALANCE, CCD IMAGER)
EJ-4 (EJECT SWITCH)
FD-6 (FUNCTION SWITCH, CAMERA DATA)
PA-13 (POWER)
SW-92 (START/STOP, STAND BY SWITCHES, IN/OUT JACK)
MC-24 (START/STOP SWITCH, MIC AMP)
FC-16 (MODE CONTROL)
VA-41 (VIDEO/AUDIO SIGNAL PROCESS)
PR-20 (HIC)
MX-7 (HIC)
VC-40 (CAMERA MATRIX, ENCODER, TITLE MIX)
SS-86 (SERVO, SYSTEM CONTROL, DIGITAL TITLER, REC/PB AMP)
DT-71 (HIC)
VC-39 (TIMING/SYNC GENERATOR, AGC/IRIS CONTROL, SIGNAL SEPARATION)
AF (AUTO FOCUS CONTROL, ZOOM MOTOR DRIVE)
M901 DRUM
(BLK)
(RED)
CN002 4P
1 DRUM FG
2 DRUM PG
3 DRUM COM
4 GND
CN001 4P
1 DRUM (U)
2 DRUM (V)
3 COM
4 DRUM (W)
CN003 13P
VIDEO HEAD
FLYING ERASE HEAD
CH1' GND 1
CH1' (Y) 2
CH1' (X) 3
CH2 GND 4
CH2 (Y) 5
CH2 (X) 6
CH1 GND 7
CH1 (Y) 8
CH1 (X) 9
FE GND 10
FE (Y) 11
FE (X) 12
GND 13
W001 10P (WHT)
1 CAM REC
2 CAM STBY
3 GND
4 TELE
5 WIDE
6 S/S 5V
7 LINCS POWOR
8 LINCS DC
9 EP OUT
10 AUDIO GND
CN006 5P
1 UNREG
2 UN REG
3 SP LP
4 UNREG GND
5 UNREG GND
CN930 10P (WHT)
1 CAM REC
2 CAM STBY
3 GND
4 TELE
5 WIDE
6 S/S 5V
7 LINCS POWOR
8 LINCS DC
9 EP OUT
10 AUDIO GND
CN932 2P(WHT)
GND 1
CAM REC 2
SW-92
CN931 3P(WHT)
WIDE 1
GND 2
TELE 3
V901 CRT
W
T
W 970
WIDE 1
GND 2
TELE 3
ZM-8
W991 5P
1 UNREG
2 UNREG
3 SP/LP
4 UNREG GND
5 UNREG GND
L951 DY
1
2
BATTERY PACK
W992
BATT (+) 1
BATT (-) 2
PA-13
W990 4P
1 L1 3V
2 GND
3 UNREG
4 UNREG GND
SM-41

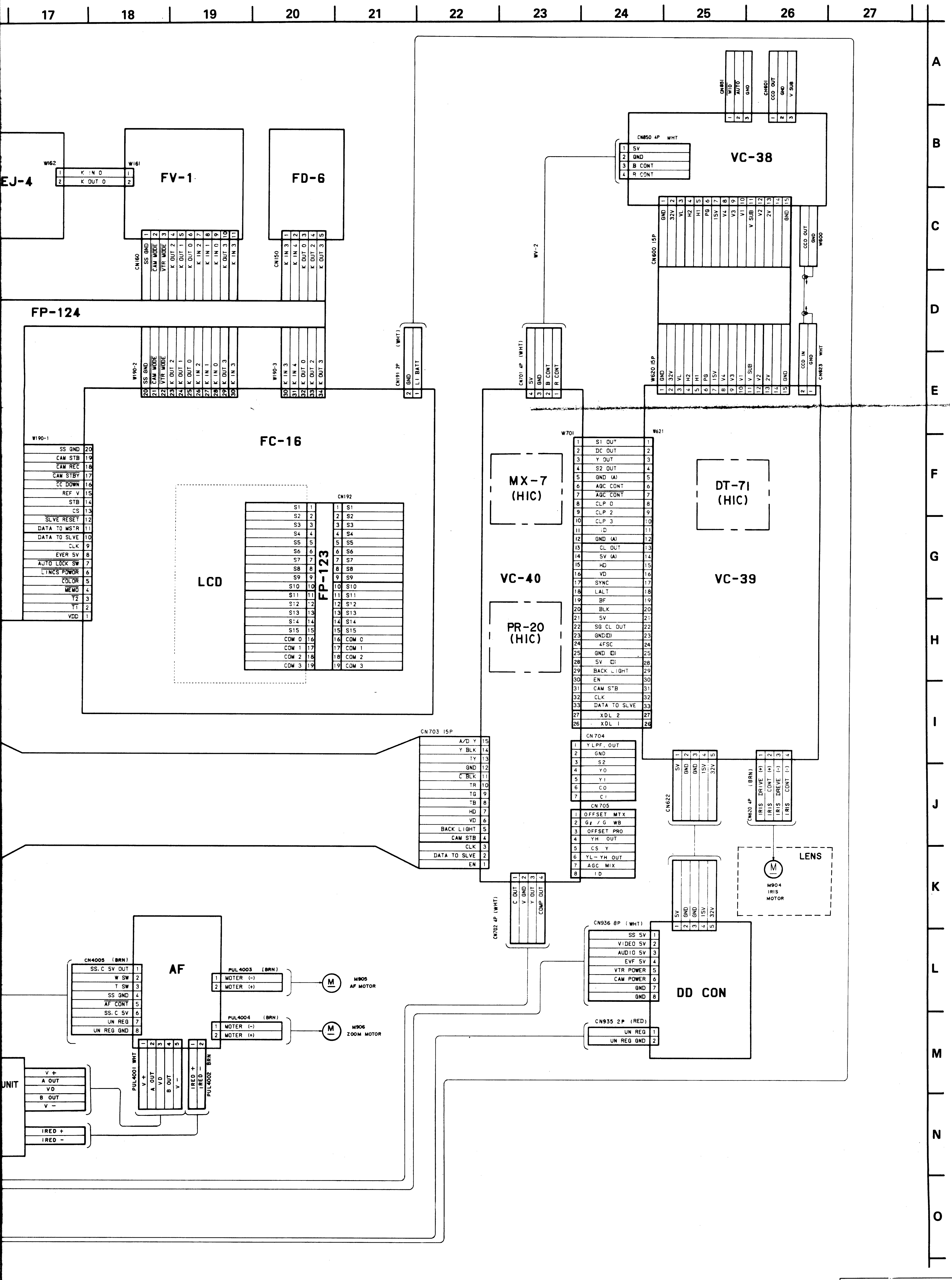
VIDEO, AUDIO FRAME



3
4
5
6
7
8
9
10
11
12
13
14
FV-1 (VTR FUNCTION SWITCH, POWER SWITCH)
EJ-4 (EJECT SWITCH)
PA-13 (POWER)
SW-92 (START/STOP, STAND BY SWITCHES, IN/OUT JACK)
SS-86 (SERVO, SYSTEM CONTROL, DIGITAL TITLER, REC/PB AMP)
DT-71 (HIC)
M901 DRUM
DEW SENSOR
DEW SENS
DEW GND
M903 LOADING MOTOR
C901
LOAD MTR (+)
LOAD MTR (-)
CC DOWN SW
GND
S902 CC DOWN SW
CC-7
M902 CAPSTAN MOTOR
REC PROOF SW
ME/MP
T/E SENS LED
T/E FG LED
T FG
SS 5V
S FG
FP-53
S301
TAPE SELECT
REC PROOF SW
D302 TAPE LED
FP-118
CN002 4P
DRUM FG
DRUM PG
DRUM COM
CN001 4P
DRUM (U)
DRUM (V)
COM
DRUM (W)
CN004 8P
RF SWP
REC RF
RF OUT
1'CH
SEL 1
SEL 2
ATF LOCK
CC DOWN
MODE SW 1
MODE SW 2
MODE SW 3
T/S LED
REC PROOF
T/E LED
DEW SENS
CAP (U)
CAP (V)
CAP (W)
VH (+)
VH (-)
C FG (+)
C FG (-)
CN003 13P
CH1 GND
CH1 (Y)
CH1 (X)
CH2 GND
CH2 (Y)
CH2 (X)
FE GND
FE (Y)
FE (X)
SS-86
W001 10P (WHT)
CAM REC
CAM STBY
TELE
WIDE
S/S 5V
LINCS POWOR
LINCS DC
EP OUT
AUDIO GND
CN006 5P
UNREG
UN REG
SP/LP
UNREG GND
W003
FP-134
PB RF
RF GND
REC ATF RF
REC C RF
REC AFM RF
REC Y RF
SS GND
DOC
CLOG
JOG VD
REF V
SEL 1
SEL 2
V MUTE
RP 5V
HCHG
RF SWP
JOG
SP/LP
SS 5V
VA PB MODE
CAM POWOR
SLOW
RP PB MODE
ATF ERR
TALLY
TS B
ATF LOCK
A MUTE
CG 5V
CG WIND
STB
CLK
DATA TO SLVE
VTR POWOR
SEL 16K/47K
V SO.
V CS
V CK
A GND
EAR PHONE
W360
J361
VIDEO OUT
RFU DC OUT
AUDIO OUT
VA-41
CN360 4P (WHT)
EVF 5V
VF OUT
TALLY
CN361 3P
MIC 5V
MIC IN
MIC GND
W361 8P
CAM POWER
VTR POWER
EVF 5V
AUDIO 5V
VIDEO 5V
W362 3P
Y IN
V GND
C IN
CN930 10P (WHT)
SW-92
W932 2P (WHT)
CN931 3P (WHT)
W 970
ZM-8
BATTERY PACK
W992
BATT (+)
BATT (-)
W991 5P
PA-13
W990 4P
L1 3V
W904 4P
CN901 2P (RED)
DH1
DH2
CN902 2P (WHT)
DV1
DV2
W902
VF-13
W901 3P
O G1
H1
H2
W903
EVF 5V
TL-19
TL-18
W951
W585 3P
MIC OUT
J586 MIC DC
J585 MIC
MC-24
CN585 3P (WHT)
MIC +B
MIC IN
MIC GND
W586 2P
MIC UNIT
SM-41


13
14
15
16
17
18
19
20
21
22
23
24
FP-53
1 REC PROOF SW
2 ME/ MP
3 T/E SENS LED
4 GND
5 T/E FG LED
6 T FG
7 SS 5V
8 S FG
9 SS 5V
S301
TAPE SELECT SW
REC PROOF SW
D302
TAPE LED
EJ-4
W162
W161
1 K IN 0
2 K OUT 0
FV-1
FD-6
CN160
1 SS GND
2 CAM MODE
3 VTR MODE
4 K OUT 2
5 K OUT 1
6 K OUT 0
7 K IN 2
8 K IN 1
9 K IN 0
10 K OUT 3
11 K IN 3
CN150
1 K IN 3
2 K IN 4
3 K OUT 0
4 K OUT 2
5 K OUT 3
FP-124
W190-2
20 SS GND
21 CAM MODE
22 VTR MODE
23 K OUT 2
24 K OUT 1
25 K OUT 0
26 K IN 2
27 K IN 1
28 K IN 0
29 K OUT 3
30 K IN 3
W190-3
30 K IN 3
31 K IN 4
32 K OUT 0
33 K OUT 2
34 K OUT 3
CN191 2P (WHT)
2 GND
1 LI BATT
WV-2
CN701 4P (WHT)
4 5V
3 GND
2 B CONT
1 R CONT
FC-16
CN007
W190-1
20 SS GND
19 CAM STB
18 CAM REC
17 CAM STBY
16 CC DOWN
15 REF V
14 STB
13 CS
12 SLVE RESET
11 DATA TO MSTR
10 DATA TO SLVE
9 CLK
8 EVER 5V
7 AUTO LOCK SW
6 LINCS POWER
5 COLOR
4 MEMO
3 T2
2 T1
1 VDD
LCD
FP-123
CN192
1 S1
2 S2
3 S3
4 S4
5 S5
6 S6
7 S7
8 S8
9 S9
10 S10
11 S11
12 S12
13 S13
14 S14
15 S15
16 COM 0
17 COM 1
18 COM 2
19 COM 3
VC-40
MX-7 (HIC)
PR-20 (HIC)
W701
1 S1 OUT
2 DC OUT
3 Y OUT
4 S2 OUT
5 GND (A)
6 AGC CONT
7 AGC CONT
8 CLP 0
9 CLP 2
10 CLP 3
11 ID
12 GND (A)
13 CL OUT
14 5V (A)
15 HD
16 VD
17 SYNC
18 LALT
19 BF
20 BLK
21 5V
22 SG CL OUT
23 GND(D)
24 4FSC
25 GND (D)
28 5V (D)
29 BACK LIGHT
30 EN
31 CAM STB
32 CLK
33 DATA TO S
27 XDL 2
26 XDL 1
CN704
1 YLPF. OUT
2 GND
3 S2
4 Y0
5 Y1
6 C0
7 C1
CN705
1 OFFSET MTX
2 GR / G WB
3 OFFSET PRO
4 YH OUT
5 CS Y
6 YL-YH OUT
7 AGC MIX
8 ID
W004 15P
CN703 15P
15 A/D Y
14 Y BLK
13 TY
12 GND
11 C BLK
10 TR
9 TG
8 TB
7 HD
6 VD
5 BACK LIGHT
4 CAM STB
3 CLK
2 DATA TO SLVE
1 EN
VIDEO OUT
RFU DC OUT
AUDIO OUT
CN702 4P (WHT)
1 C OUT
2 V GND
3 Y OUT
4 COMP OUT
CN936 8P
VID
AUD
VTR
CAM
CN935 2P
UN RE
CN005
7 W SW
6 T SW
5 SS GND
4 AF CONT
3 SS C 5V
2 UN REG
1 UN REG GND
AF
CN4005 (BRN)
1 SS.C 5V OUT
2 W SW
3 T SW
4 SS GND
5 AF CONT
6 SS.C 5V
7 UN REG
8 UN REG GND
PUL4003 (BRN)
1 MOTER (-)
2 MOTER (+)
M905
AF MOTOR
PUL4004 (BRN)
1 MOTER (-)
2 MOTER (+)
M906
ZOOM MOTOR
PUL4001 WHT
1 V+
2 A OUT
3 VD
4 B OUT
5 V-
PUL4002 BRN
1 IRED +
2 IRED -
AF BLOCK UNIT
V+
A OUT
VD
B OUT
V-
IRED +
IRED -
GND 15

FRAME FRAME


17
18
19
20
21
22
23
24
25
26
27
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
EJ-4
W162
K IN 0
K OUT 0
W161
FV-1
FD-6
CN160
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K OUT 3
K IN 3
CN150
K IN 3
K IN 4
K OUT 0
K OUT 2
K OUT 3
FP-124
W190-2
W190-3
CN191 2P (WHT)
GND
LI BATT
FC-16
W190-1
SS GND
CAM STB
CAM REC
CAM STBY
CC DOWN
REF V
STB
CS
SLVE RESET
DATA TO MS'R
DATA TO SLVE
CLK
EVER 5V
AUTO LOCK SW
LINCS POWOR
COLOR
MEMO
T2
T1
VDD
LCD
FP-123
CN192
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
COM 0
COM 1
COM 2
COM 3
WV-2
CN701 4P (WHT)
5V
GND
B CONT
R CONT
VC-40
MX-7 (HIC)
PR-20 (HIC)
W701
S1 OUT
DC OUT
Y OUT
S2 OUT
GND (A)
AGC CONT
AGC CONT
CLP 0
CLP 2
CLP 3
ID
GND (A)
CL OUT
5V (A)
HD
VD
SYNC
LALT
BF
BLK
5V
SG CL OUT
GND(D)
4FSC
GND (D)
5V (D)
BACK LIGHT
EN
CAM STB
CLK
DATA TO SLVE
XDL 2
XDL 1
W621
VC-39
DT-71 (HIC)
VC-38
CN850 4P WHT
5V
GND
B CONT
R CONT
CN851
W10
AUTO
GND
CN601
CCD OUT
GND
V SUB
CN600 15P
W620 15P
GND
32V
VL
H2
H1
PG
15V
V4
V3
V1
V SUB
V2
2V
GND
CCD OUT
GND
W600
CCD IN
GND
CN623 WHT
CN703 15P
A/D Y
Y BLK
TY
GND
C BLK
TR
TG
TB
HD
VD
BACK LIGHT
CAM STB
CLK
DATA TO SLVE
EN
CN704
YLPF. OUT
GND
S2
YO
YI
CO
CI
CN705
OFFSET MTX
GI / G WB
OFFSET PRO
YH OUT
CS Y
YL-YH OUT
AGC MIX
ID
CN702 4P (WHT)
C OUT
V GND
Y OUT
COMP OUT
CN622
5V
GND
GND
15V
32V
CN620 4P (BRN)
IRIS DRIVE (+)
IRIS CONT (+)
IRIS DREVE (-)
IRIS CONT (-)
LENS
M904 IRIS MOTOR
M
DD CON
CN936 8P (WHT)
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
GND
GND
CN935 2P (RED)
UN REG
UN REG GND
AF
CN4005 (BRN)
SS.C 5V OUT
W SW
T SW
SS GND
AF CONT
SS.C 5V
UN REG
UN REG GND
PUL4003 (BRN)
MOTER (-)
MOTER (+)
M905 AF MOTOR
PUL4004 (BRN)
MOTER (-)
MOTER (+)
M906 ZOOM MOTOR
PUL4001 WHT
V +
A OUT
VD
B OUT
V -
PUL4002 BRN
IRED +
IRED -
UNIT
V +
A OUT
VD
B OUT
V -
IRED +
IRED -

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

VC-38 (CCD IMAGER), VC-39 (TIMING/SYNC GENERATOR), VC-40 (CAMERA MATRIX, CAMERA ENCODER, TITLE MIX) PRINTED WIRING BOARDS

– Ref. No. VC-38, VC-39, VC-40 BOARDS: 1,000 series –

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ▒ : Pattern from the side which enables seeing.
- Circled numbers refer to waveforms.

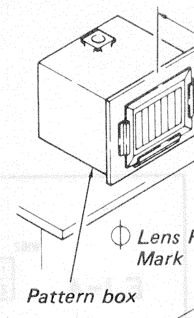
For schematic diagram:

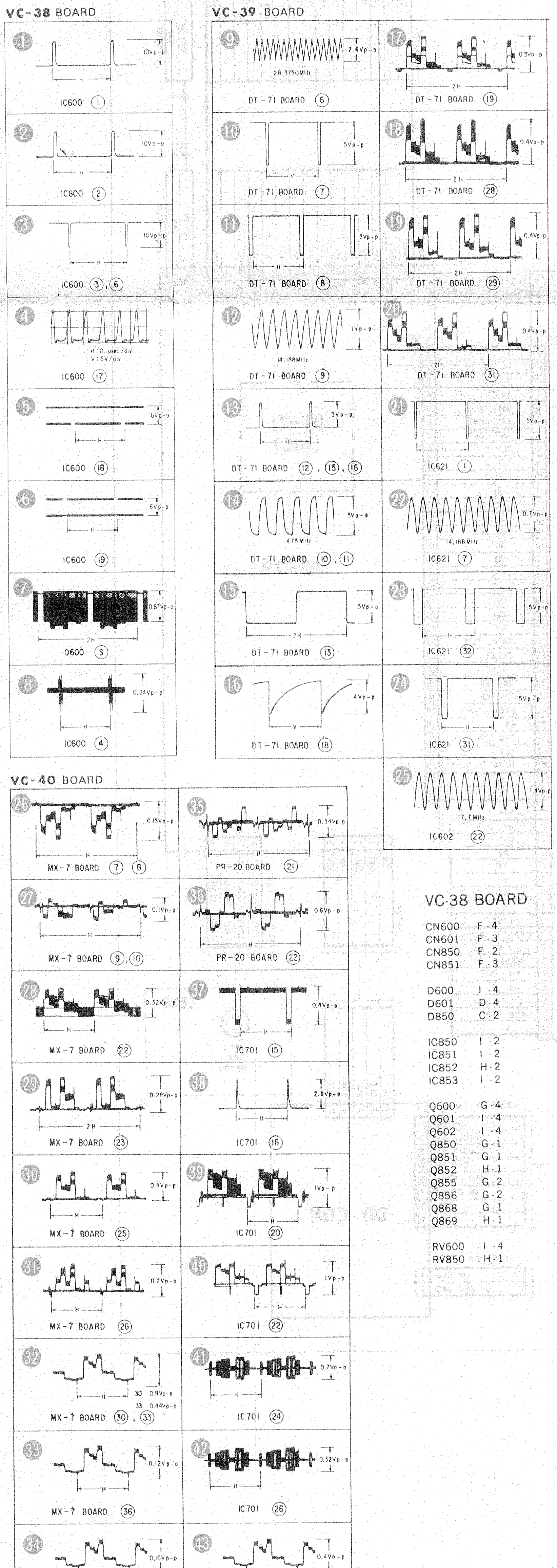
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊏ᴡᴡ⊐ : nonflammable resistor.
- ⊏ᴡᴡ∿⊐ : fusible resistor.

- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repair.
- ▬ : B+ line.
- Voltages are dc between measurement points and ground unless otherwise noted.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.
- ⇨ : IN/OUT direction of B line (+, –).
- Readings are taken with a color-bar signal input.
- Circled numbers refer to waveforms.

- Voltage and waveform
  (1) Sample object: P
  (2) Voltage values: B
  g
  n
  o

1. Connection

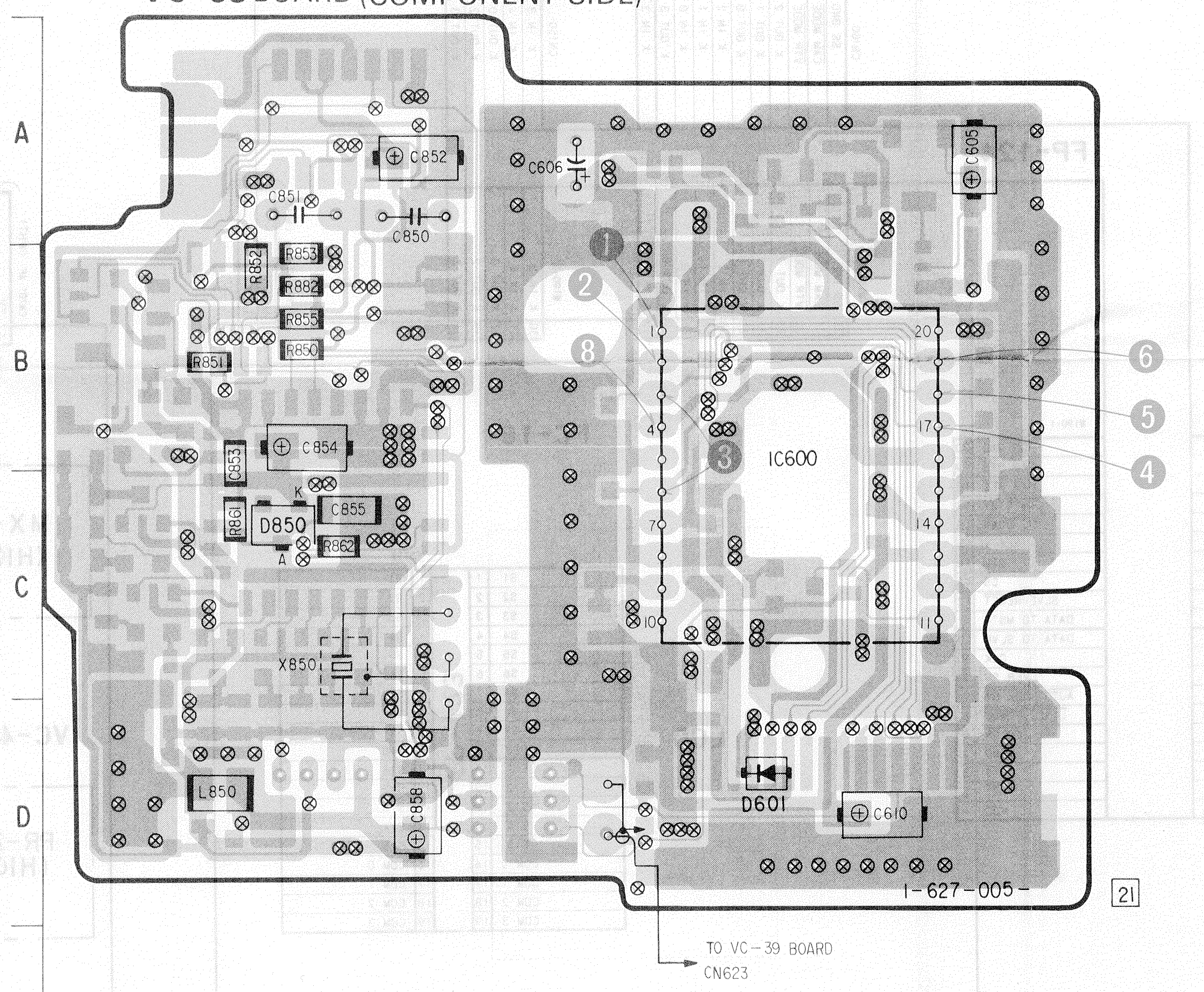

Lens Mark
Pattern box



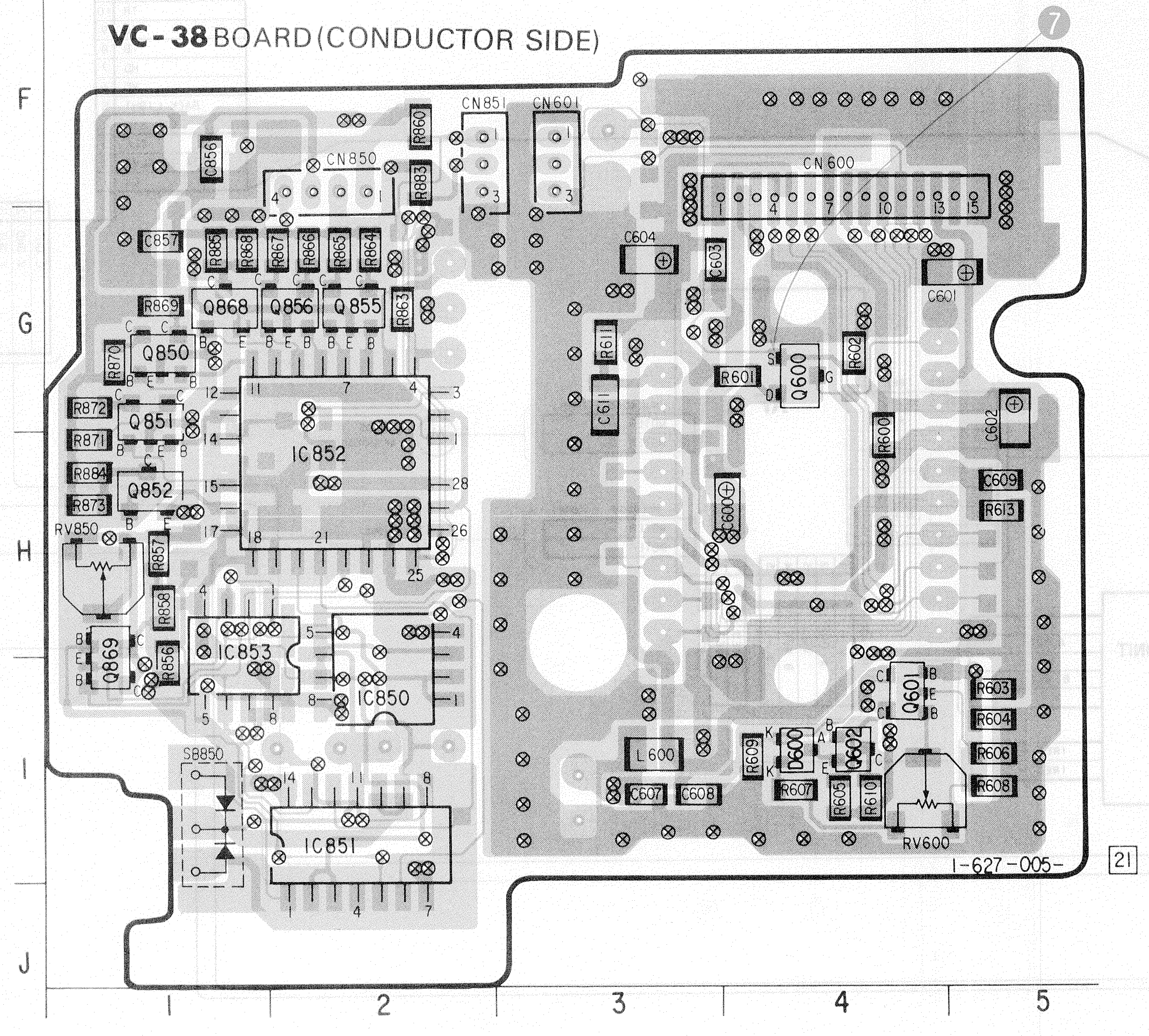
VC-38 BOARD

CN600	F-4
CN601	F-3
CN850	F-2
CN851	F-3
D600	I-4
D601	D-4
D850	C-2
IC850	I-2
IC851	I-2
IC852	H-2
IC853	I-2
Q600	G-4
Q601	I-4
Q602	I-4
Q850	G-1
Q851	G-1
Q852	H-1
Q855	G-2
Q856	G-2
Q868	G-1
Q869	H-1
RV600	I-4
RV850	H-1

VC-38 BOARD (COMPONENT SIDE)


A
B
C
D
E
C852
C851
C850
C606
C605
R852
R853
R882
R855
R850
R851
C854
C853
R861
D850
C855
R862
K
A
X850
IC600
① ② ③ ④ ⑤ ⑥ ⑧
1
4
7
10
11
14
17
20
L850
C858
D601
C610
1-627-005-
21
TO VC-39 BOARD CN623

VC-38 BOARD (CONDUCTOR SIDE)


⑦
F
G
H
I
J
1
2
3
4
5
CN851
CN601
CN850
CN600
R860
R883
C856
C857
R885
R868
R867
R866
R865
R864
R863
R869
Q868
Q856
Q855
Q850
R870
R872
Q851
R871
R884
Q852
R873
IC852
RV850
R857
R858
Q869
R856
IC853
IC850
SB850
IC851
C604
C603
C601
R611
R602
Q600
R601
C611
R600
C602
C600
C609
R613
Q601
R603
R604
R606
R608
L600
C607
C608
R609
D600
Q602
R607
R605
R610
RV600
1-627-005-
21

ARDS

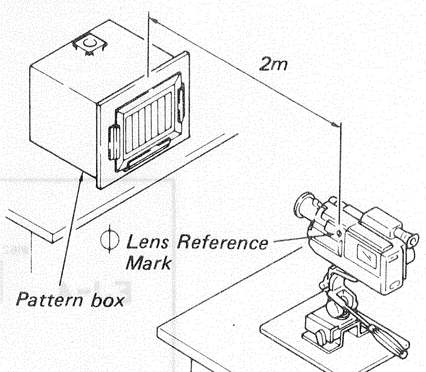
ound

MΩ).

oduc-

- Voltage and waveform measuring conditions:
  (1) Sample object: Pattern box color bars.
  (2) Voltage values: Between measurement point and ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

1. Connection


2m
Lens Reference Mark
Pattern box

2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

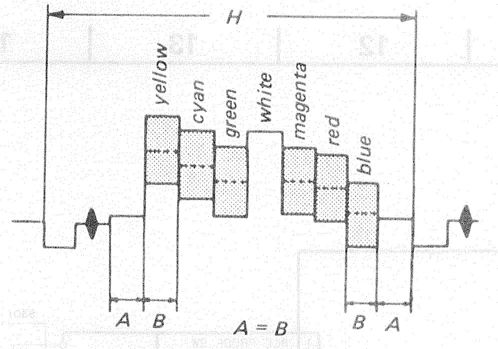

H
yellow
cyan
green
white
magenta
red
blue
A
B
A = B
B
A

Fig. a Camera output waveform

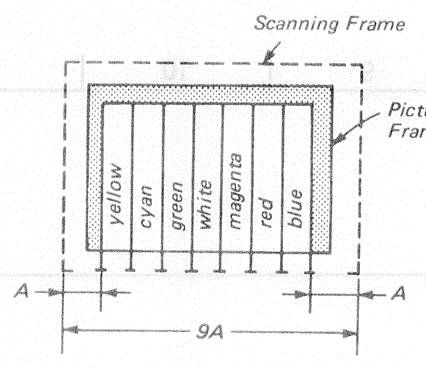
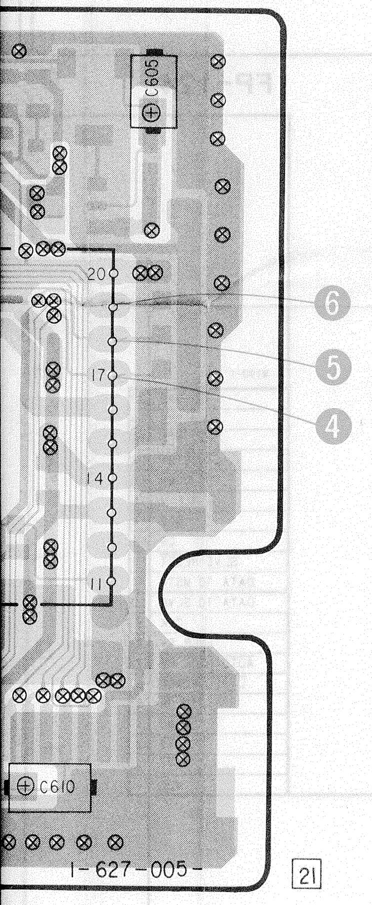

Scanning Frame
Picture Tube Frame
yellow
cyan
green
white
red
blue
A
A
9A

Fig. b Picture of TV monitor screen

When indicating parts by ence number, please incluc board name.

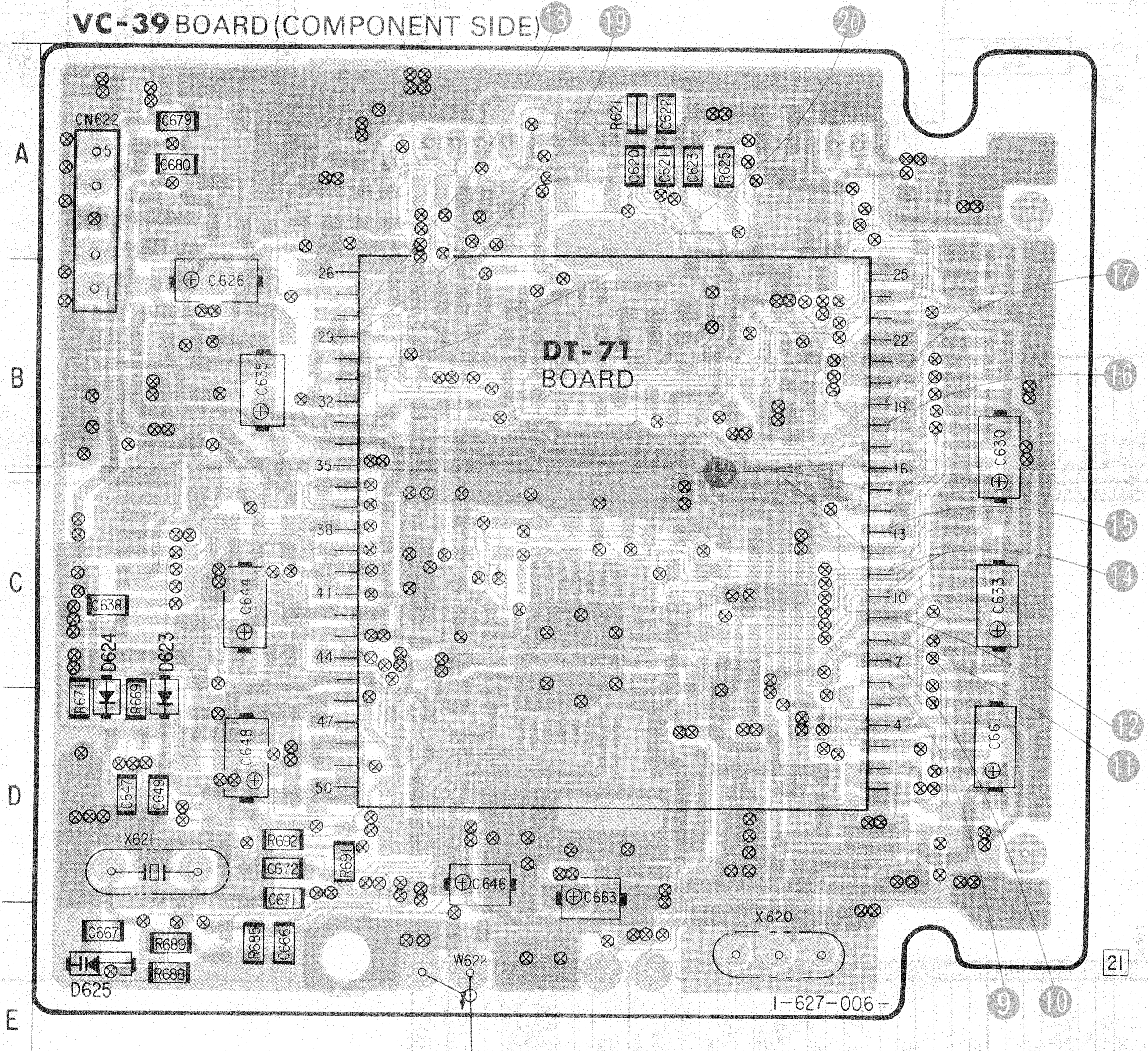
Note: The components ider line with mark ⚠ are Replace only with par

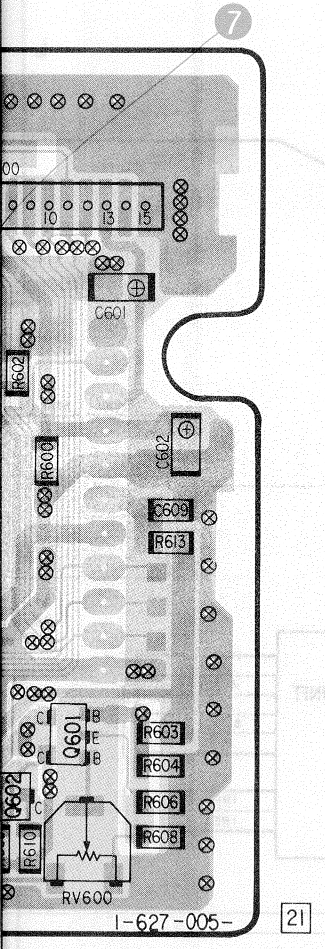

C605
20
17
14
11
6
5
4
C610
1-627-005-
21

VC-39 BOARD

CN620	J-3
CN622	A-1
CN623	J-4
D623	C-1
D624	C-1
D625	E-1
D626	J-3
IC620	J-2
IC621	H-3
Q621	I-3
Q622	I-3
Q623	I-4
Q624	I-2
Q625	G-2
Q626	G-2
Q626	G-2
Q627	G-2
Q628	G-2
Q629	H-2
Q630	I-5
RV620	J-1
RV621	J-4
RV622	I-2
RV623	H-4

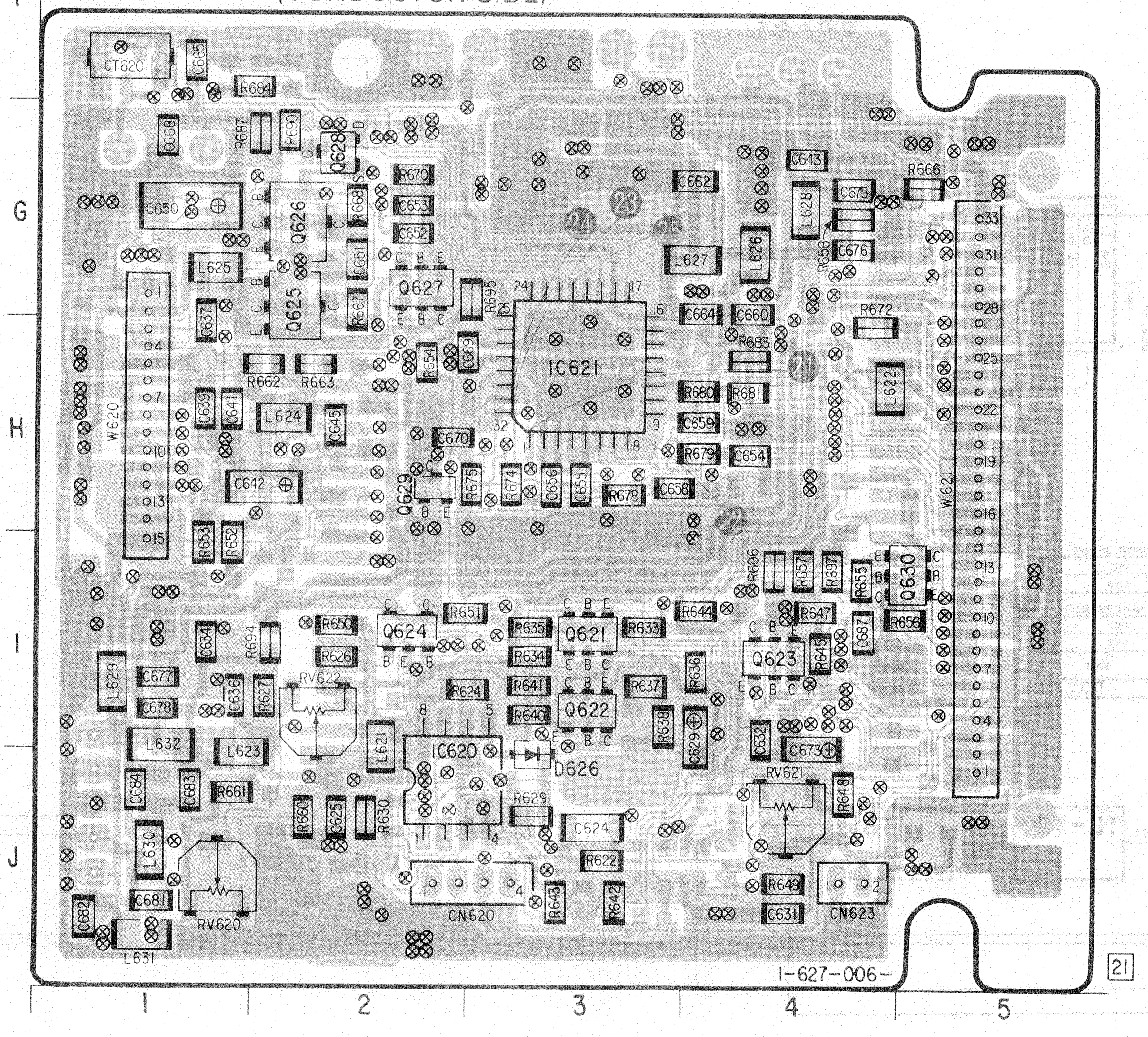
VC-39 BOARD (COMPONENT SIDE)


⑱
⑲
⑳
A
B
C
D
E
CN622
C679
C680
C626
C635
R621
C522
C620
C521
C623
R626
DT-71
BOARD
26
29
32
35
38
41
44
47
50
25
22
19
16
13
10
7
4
1
⑰
⑯
⑮
⑭
⑬
⑫
⑪
⑩
⑨
C630
C633
C661
C644
C648
C638
D624
D623
R671
R669
C647
C649
X621
R692
C672
C671
R691
C646
C663
X620
C667
R689
R688
R685
C666
D625
W622
1-627-006-
21


⑦
C601
R602
R600
C602
C609
R613
Q601
R603
R604
R606
R608
R610
RV600
1-627-005-
21
5

F

VC-39 BOARD (CONDUCTOR SIDE)


G
H
I
J
CT620
C635
R684
R687
R690
Q628
C668
C650
Q626
R668
R670
C653
C652
C651
L625
Q625
R667
Q627
R695
C637
R662
R663
W620
L624
C639
C641
C645
C642
Q629
C670
R675
R674
C656
C655
R678
C658
IC621
C669
R654
R680
R681
C659
R679
C654
C664
C660
R683
L627
C662
C643
L628
C675
C676
R658
R666
R672
L626
L622
W621
㉑
㉒
㉓
㉔
㉕
R653
R652
C634
R694
R650
R626
Q624
R651
R635
R634
Q621
R633
R644
R647
Q623
C687
R656
R696
R657
R697
R655
Q630
L629
C677
C678
C636
R627
RV622
R624
R641
R640
Q622
R637
R636
R638
C629
C632
C673
RV621
R648
L632
L623
R661
L621
IC620
D626
R629
C624
R622
C684
C683
R660
C625
R630
L630
C681
RV620
C682
L631
CN620
R643
R642
R649
C631
CN623
1-627-006-
21
1
2
3
4
5

tripod so that
cture of Fig. b

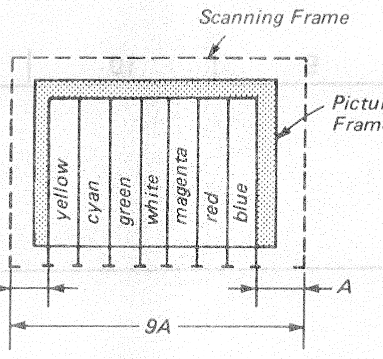

Scanning Frame
Picture Tube Frame
yellow
cyan
green
white
magenta
red
blue
A
A
9A

Fig. b Picture of TV monitor screen

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note:
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

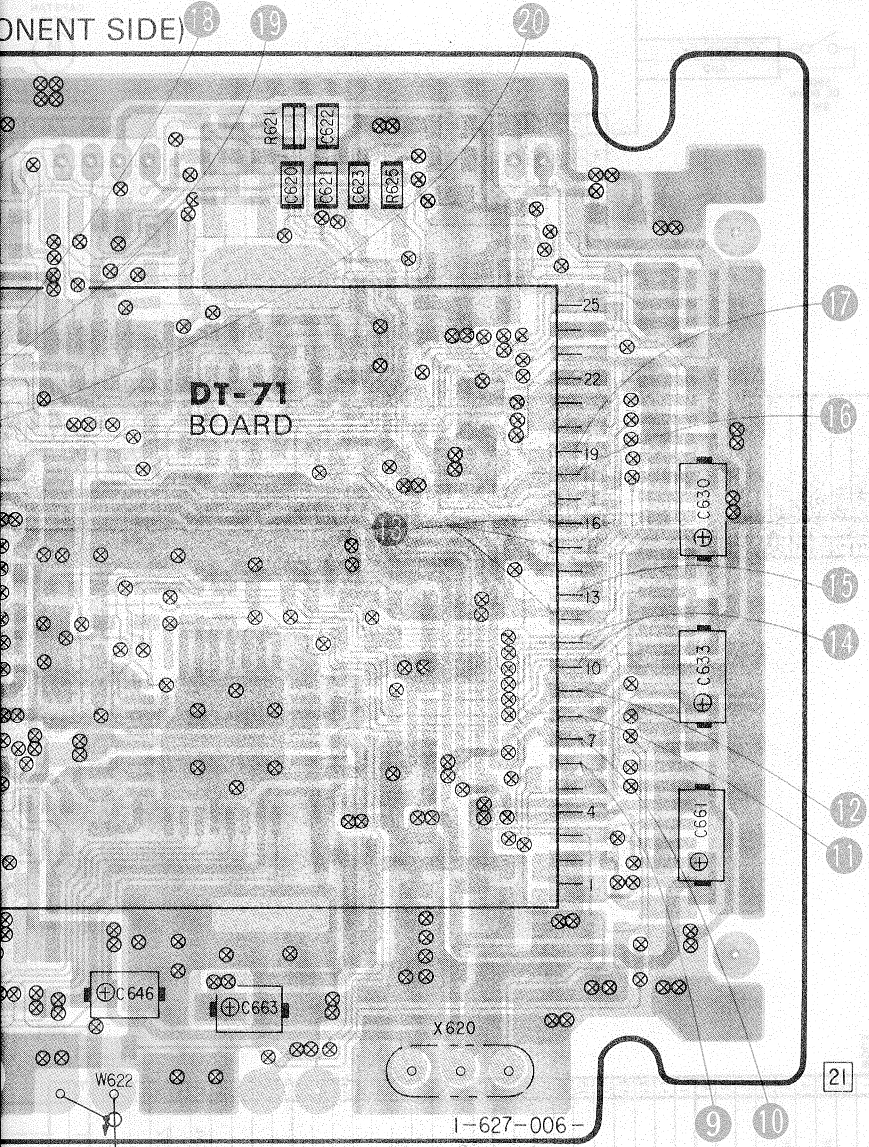
Caution:

Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.

Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (VC-39: Q624) is transistor with resistor. Refer to the VC-39 board schematic diagram for digital transistor.

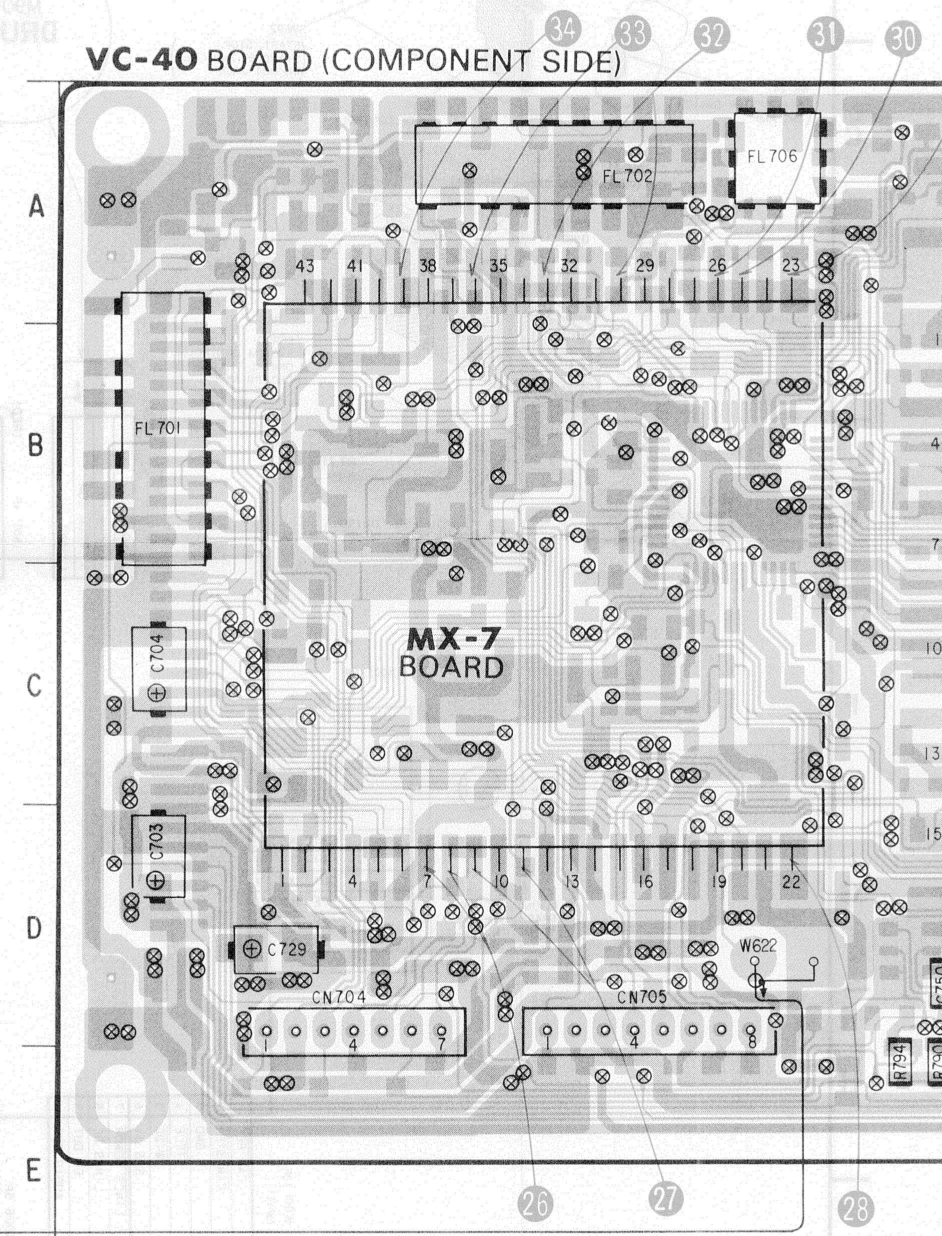
ONENT SIDE)


DT-71
BOARD
⑱
⑲
⑳
⑰
⑯
⑮
⑭
⑬
⑫
⑪
⑨
⑩
C630
C633
C661
C646
C663
X620
W622
R621
C522
C620
C621
C623
R625
1-627-006
21

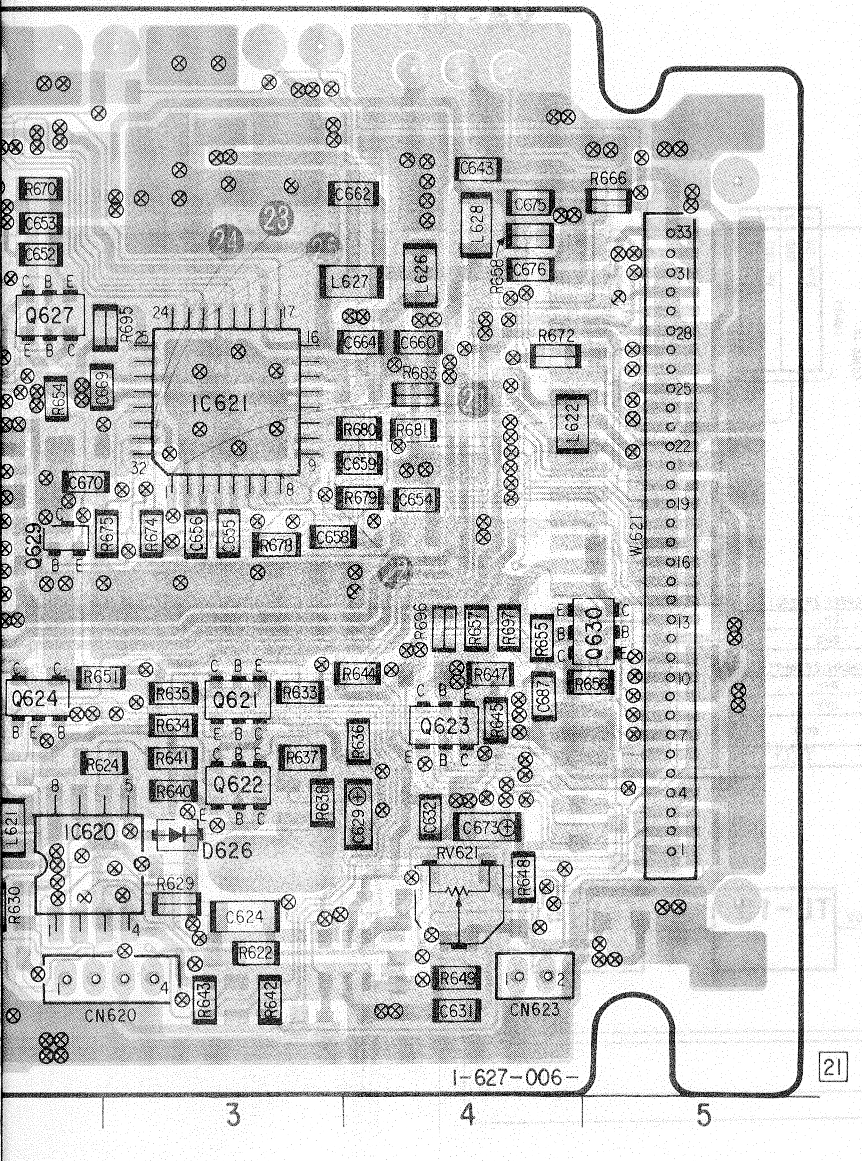
VC-40 BOARD

CN701	D-5
CN702	C-7
CN703	B-7
CN704	D-2
CN705	D-3
D701	J-4
IC701	I-3
Q701	J-2
Q702	J-2
Q705	G-6
Q706	H-6
Q707	H-6
Q708	G-4
Q709	G-4
Q710	I-3
Q711	H-3
RV701	J-2
RV705	H-2
RV706	G-2
RV707	G-2
RV708	I-6
RV709	I-5
RV710	H-5
RV711	I-6
RV712	J-5
RV713	J-5
RV714	J-6
RV715	I-6
RV716	J-4
RV717	J-4
RV718	J-3
RV719	J-2
RV720	J-2
RV721	H-4
RV722	H-5
RV724	H-5

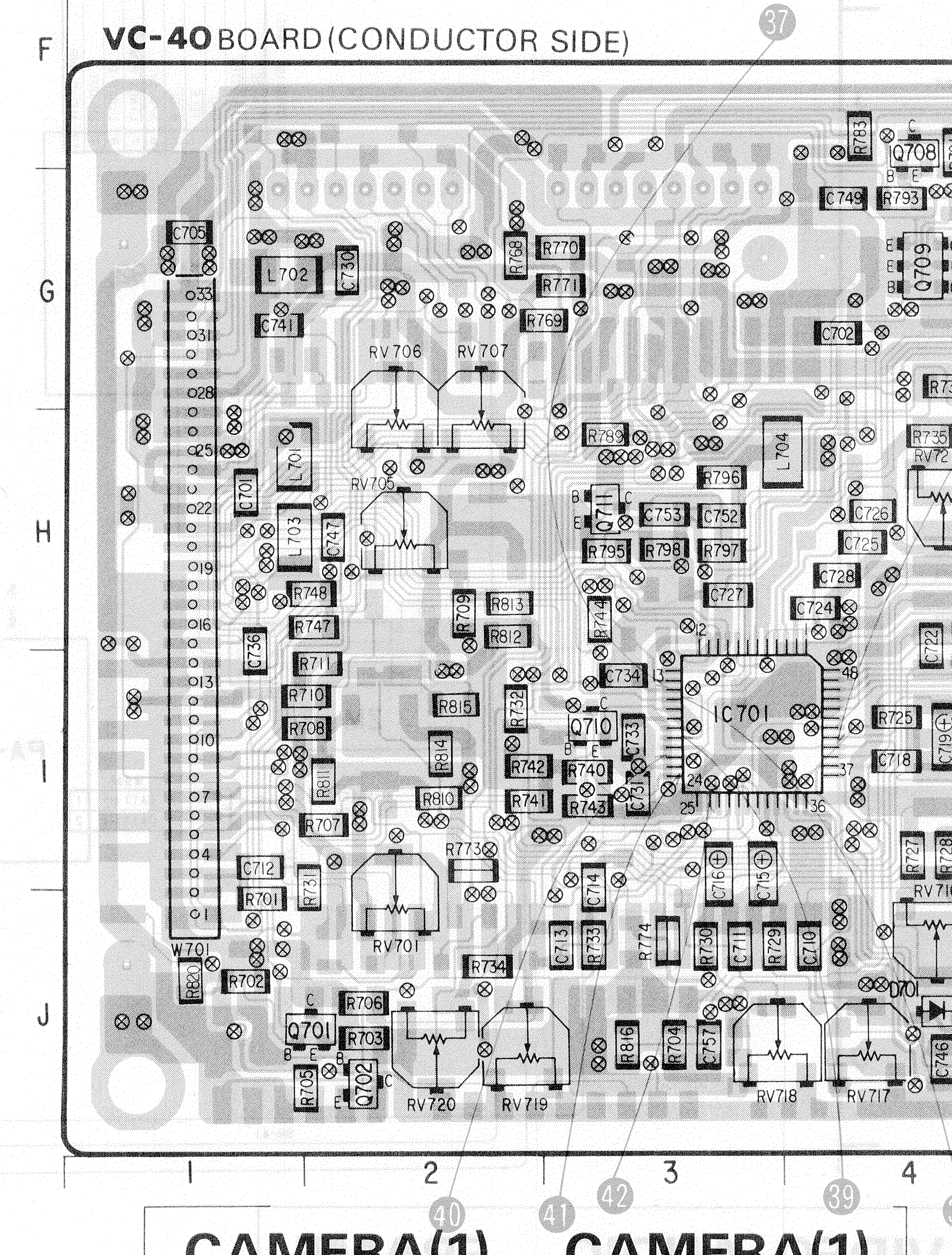
VC-40 BOARD (COMPONENT SIDE)


㉞
㉝
㉜
㉛
㉚
A
B
C
D
E
FL702
FL706
FL701
MX-7
BOARD
C704
C703
C729
CN704
CN705
W622
R794
㉖
㉗
㉘

UCTOR SIDE)


IC621
IC620
Q627
Q629
Q624
Q621
Q622
Q623
Q630
D626
L627
L626
L628
L622
W621
CN620
CN623
RV621
㉓
㉔
㉕
㉑
㉒
1-627-006
21
3
4
5

VC-40 BOARD (CONDUCTOR SIDE)


㊲
F
G
H
I
J
IC701
Q701
Q702
Q708
Q709
Q710
Q711
RV701
RV705
RV706
RV707
RV717
RV718
RV719
RV720
L701
L702
L703
L704
W701
D701
1
2
3
4
㊵
㊶
㊷
㊴

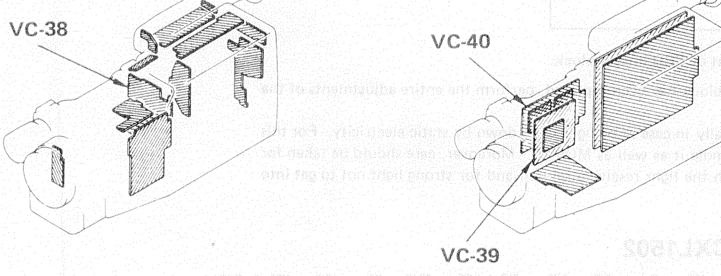
⚠ or dotted
d.

BOARD
D-5
C-7
B-7
D-2
D-3
J-4
I-3
J-2
J-2
G-6
H-6
H-6
G-4
G-4
I-3
H-3
J-2
H-2
G-2
G-2
I-6
I-5
H-5
I-6
J-5
J-5
J-6
I-6
J-4
J-4
J-3
J-2
J-2
H-4
H-5
H-5

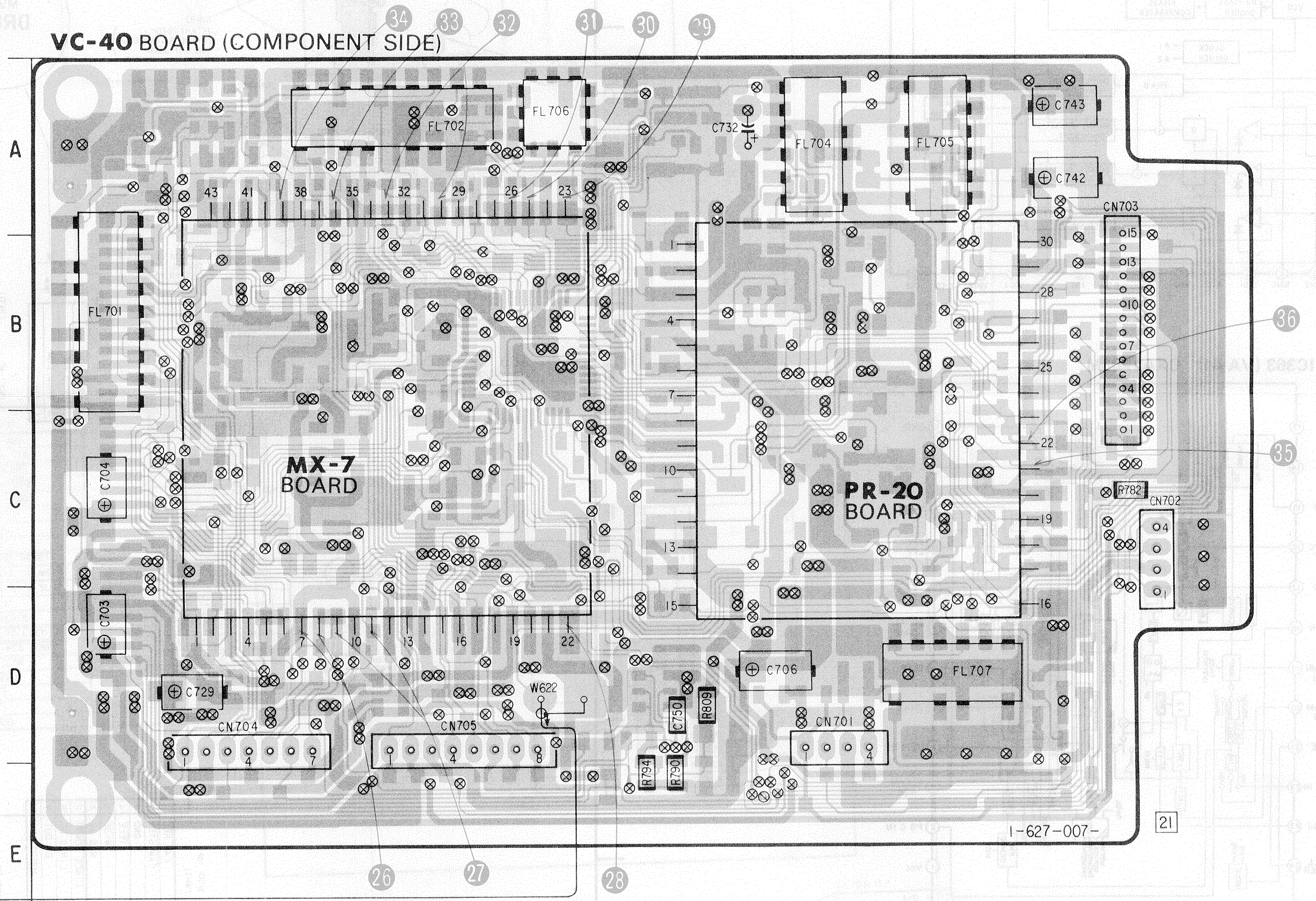
Note:
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:
Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

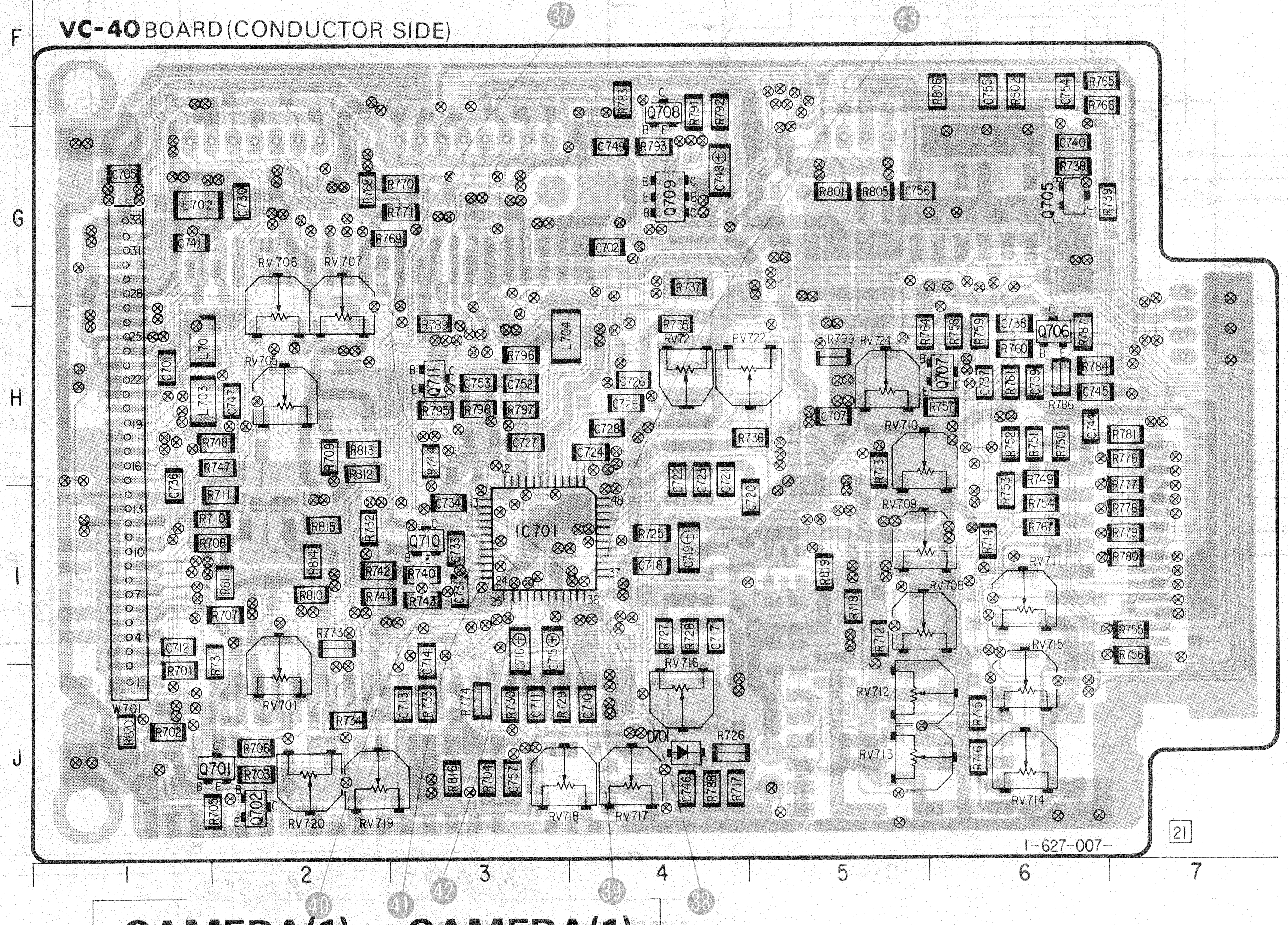
- Digital transistor (VC-39: Q624) is transistor with resistor. Refer to the VC-39 board schematic diagram for digital transistor.


VC-38
VC-40
VC-39

VC-40 BOARD (COMPONENT SIDE)

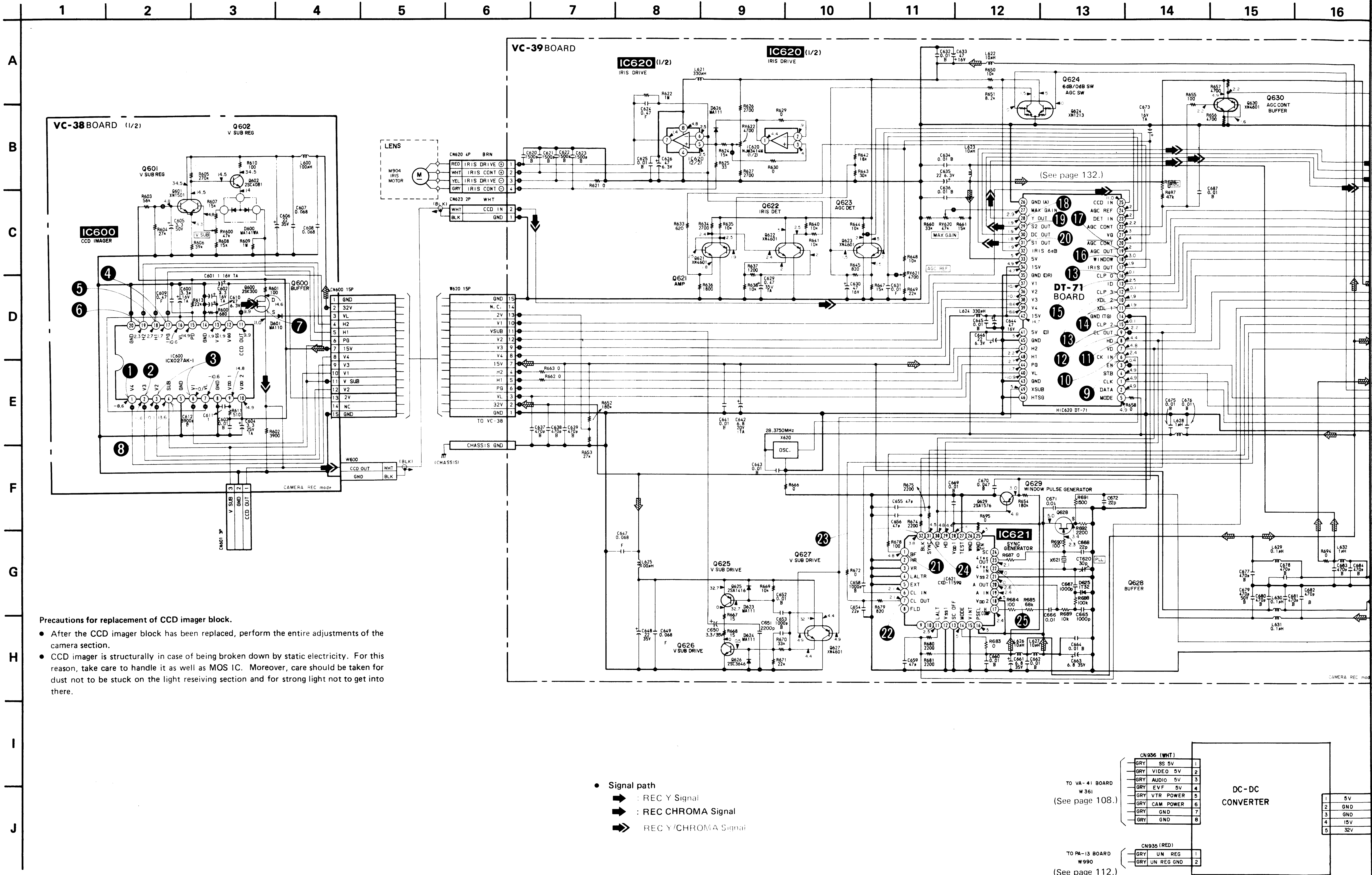

34
33
32
31
30
29
A
B
C
D
E
FL702
FL706
C732
FL704
FL705
C743
C742
CN703
FL701
MX-7 BOARD
PR-20 BOARD
36
35
R782
CN702
C704
C703
C729
CN704
CN705
W622
C750
R809
C706
FL707
CN701
R794
R790
1-627-007-
21
26
27
28

VC-40 BOARD (CONDUCTOR SIDE)


37
43
F
G
H
I
J
C705
L702
C730
C741
RV706
RV707
RV705
L703
C747
IC701
Q701
Q702
Q705
Q706
Q707
Q708
Q709
Q710
Q711
RV701
RV708
RV709
RV710
RV711
RV712
RV713
RV714
RV715
RV716
RV717
RV718
RV719
RV720
RV721
RV722
RV724
D701
W701
1-627-007-
21
1
2
3
4
5
6
7
40
41
42
39
38

VC-38 (CCD IMAGER), VC-39 (TIMING/SYNC GENERATOR), VC-40 (CAMERA MATRIX, CAMERA ENCODER, TITLE MIX) SCHEMATIC DIAGRAM

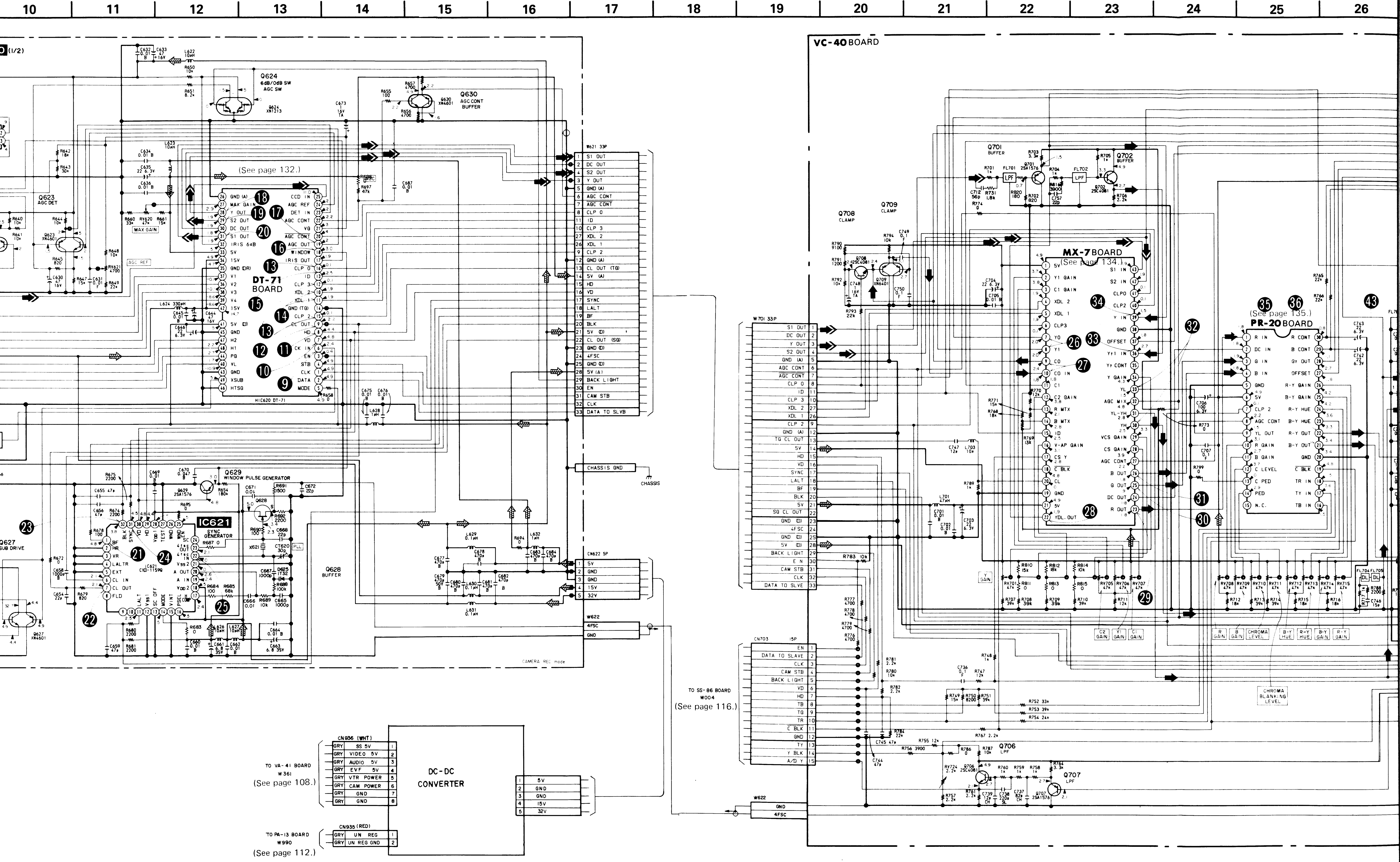
– Ref. No. VC-38, VC-39, VC-40 BOARDS: 1,000 series –

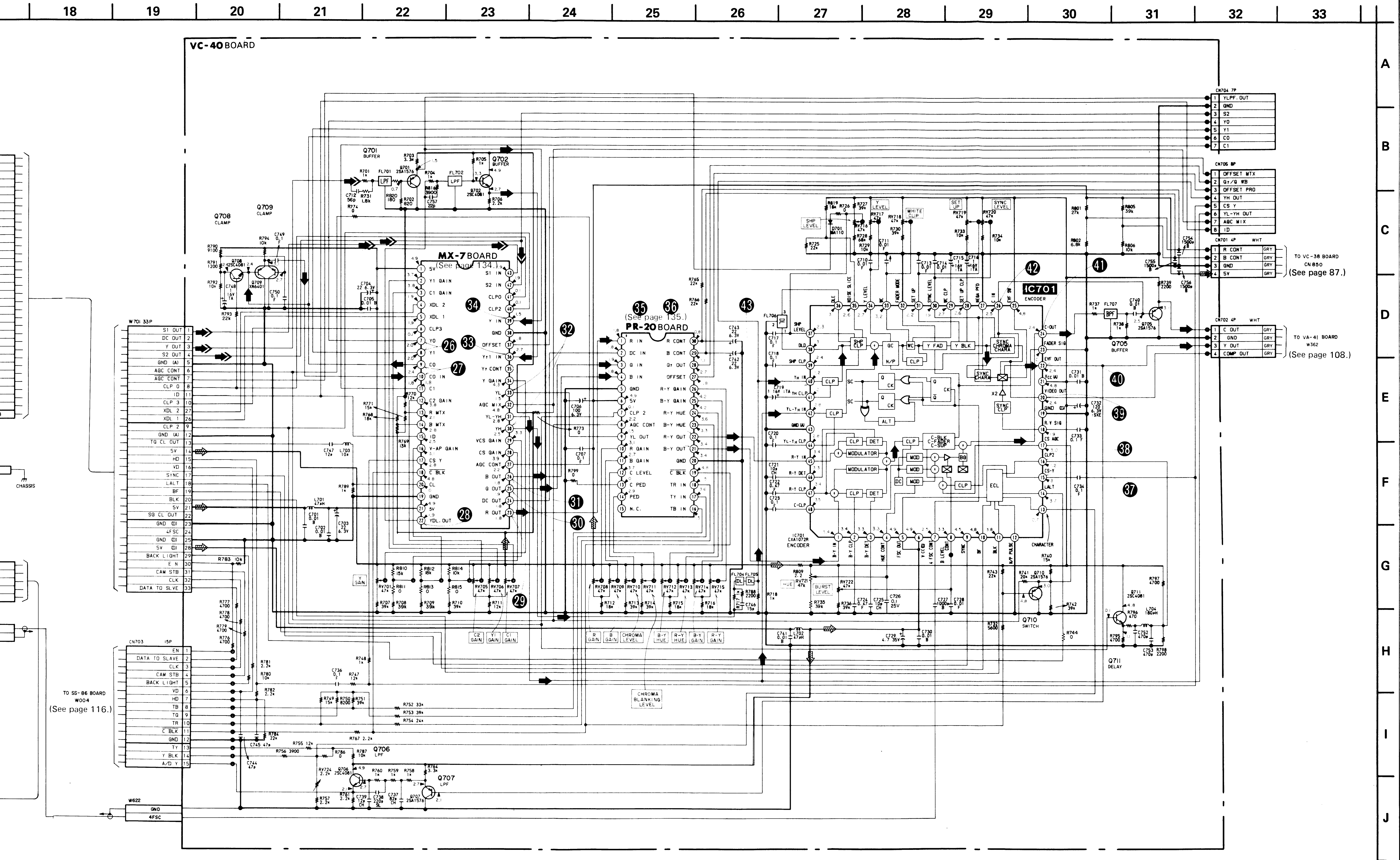

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
VC-38 BOARD (1/2)
IC600 CCD IMAGER
IC600 ICX027AK-1
Q601 V SUB REG
Q602 V SUB REG
Q600 BUFFER
CN600 15P
GND
32V
VL
H2
H1
PG
15V
V4
V3
V1
V SUB
V2
2V
NC
GND
W600
CCD OUT
GND
CAMERA REC mode
CN601 3P
V SUB
GND
CCD OUT
LENS
M904 IRIS MOTOR
CN620 4P BRN
RED IRIS DRIVE ⊕
WHT IRIS CONT ⊕
YEL IRIS DRIVE ⊖
GRY IRIS CONT ⊖
CN623 2P WHT
WHT CCD IN
BLK GND
W620 15P
TO VC-38
CHASSIS GND
(CHASSIS)
VC-39 BOARD
IC620 (1/2) IRIS DRIVE
Q622 IRIS DET
Q621 AMP
Q623 AGC DET
Q624 6dB/0dB SW AGC SW
Q630 AGC CONT BUFFER
(See page 132.)
MAX GAIN
AGC REF
DT-71 BOARD
HIC620 DT-71
GND (A)
MAX GAIN
Y OUT
S2 OUT
DC OUT
S1 OUT
IRIS 6dB
5V
15V
GND (DR)
V1
V2
V3
V4
15V
5V
GND
H2
H1
PG
YL
GND
XSUB
HTSG
CCD IN
AGC REF
DET IN
AGC CONT
VG
AGC CONT
AGC OUT
WINDOW
IRIS OUT
CLP 0
ID
CLP 3
XDL 2
XDL 1
GND (TG)
CLP 2
CL OUT
HD
VD
CK IN
EN
STB
CLK
DATA
MODE
28.3750MHz X620 OSC.
Q629 WINDOW PULSE GENERATOR
Q628
IC621 SYNC GENERATOR
IC621 CXD-1159Q
BF
HR
VR
LALTR
EXT
CL IN
CL OUT
FLD
PLL
Q628 BUFFER
Q625 V SUB DRIVE
Q626 V SUB DRIVE
Q627 V SUB DRIVE
CN936 (WHT)
TO VA-41 BOARD W361 (See page 108.)
GRY SS 5V 1
GRY VIDEO 5V 2
GRY AUDIO 5V 3
GRY EVF 5V 4
GRY VTR POWER 5
GRY CAM POWER 6
GRY GND 7
GRY GND 8
CN935 (RED)
TO PA-13 BOARD W990 (See page 112.)
GRY UN REG 1
GRY UN REG GND 2
DC-DC CONVERTER
1 5V
2 GND
3 GND
4 15V
5 32V
CAMERA REC mode

Precautions for replacement of CCD imager block.

- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

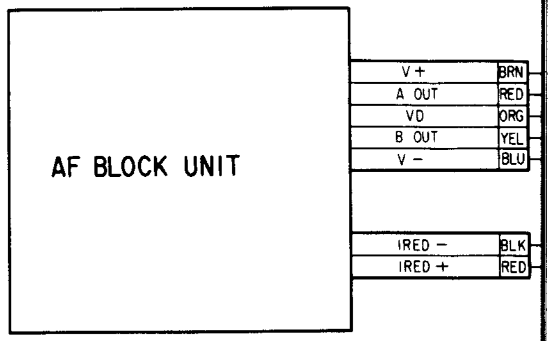
- Signal path
  - ➡ : REC Y Signal
  - ➡ : REC CHROMA Signal
  - ⇨ : REC Y/CHROMA Signal

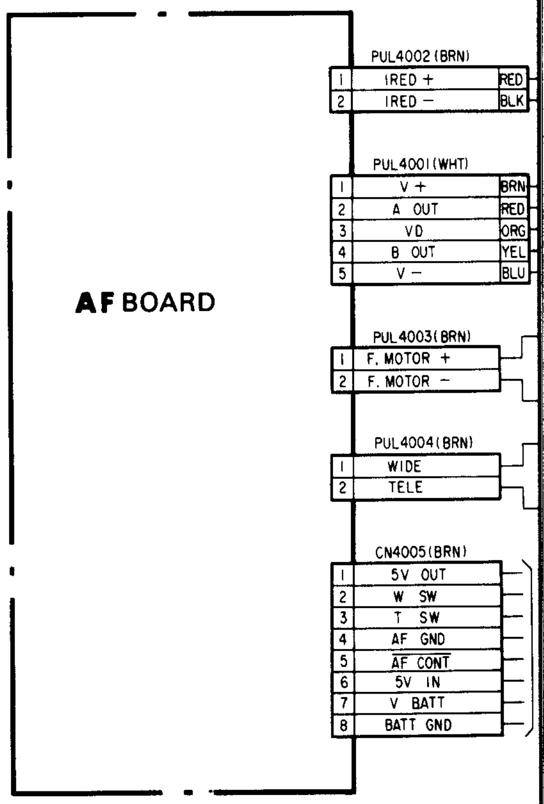

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
(1/2)
Q624 6dB/0dB SW AGC SW
Q630 AGC CONT BUFFER
Q623 AGC DET
(See page 132.)
DT-71 BOARD
HIC620 DT-71
W621 33P
S1 OUT
DC OUT
S2 OUT
Y OUT
GND (A)
AGC CONT
AGC CONT
CLP 0
ID
CLP 3
XDL 2
XDL 1
CLP 2
GND (A)
CL OUT (TG)
5V (A)
HD
VD
SYNC
LALT
BF
BLK
5V (D)
CL OUT (SG)
GND (D)
4FSC
GND (D)
5V (A)
BACK LIGHT
EN
CAM STB
CLK
DATA TO SLVB
CHASSIS GND
CHASSIS
CN622 5P
5V
GND
GND
15V
32V
W622
4FSC
GND
Q629 WINDOW PULSE GENERATOR
IC621 SYNC GENERATOR
Q628 BUFFER
Q627 SUB DRIVE
CAMERA REC mode
CN936 (WHT)
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
GND
GND
CN935 (RED)
UN REG
UN REG GND
TO VA-41 BOARD W361 (See page 108.)
TO PA-13 BOARD W990 (See page 112.)
DC-DC CONVERTER
VC-40 BOARD
W701 33P
Q701 BUFFER
Q702 BUFFER
Q708 CLAMP
Q709 CLAMP
MX-7 BOARD (See page 134.)
PR-20 BOARD (See page 135.)
CN703 15P
EN
DATA TO SLAVE
CLK
CAM STB
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
TO SS-86 BOARD W004 (See page 116.)
Q706 LPF
Q707 LPF
C2 GAIN
Y1 GAIN
C1 GAIN
R GAIN
B GAIN
CHROMA LEVEL
B-Y HUE
R-Y HUE
B-Y GAIN
R-Y GAIN
CHROMA BLANKING LEVEL
V GAIN


18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
A
B
C
D
E
F
G
H
I
J
VC-40 BOARD
MX-7 BOARD
(See page 134.)
PR-20 BOARD
(See page 135.)
IC701
ENCODER
IC701 CXA1072R ENCODER
Q701 BUFFER
Q702 BUFFER
Q708 CLAMP
Q709 CLAMP
Q705 BUFFER
Q710 SWITCH
Q711 DELAY
Q706 LPF
Q707 LPF
CN704 7P
1 YLPF. OUT
2 GND
3 S2
4 YO
5 Y1
6 CO
7 C1
CN705 8P
1 OFFSET MTX
2 Gr/G WB
3 OFFSET PRO
4 YH OUT
5 CS Y
6 YL-YH OUT
7 AGC MIX
8 ID
CN701 4P WHT
1 R CONT
2 B CONT
3 GND
4 5V
GRY
TO VC-38 BOARD
CN850
(See page 87.)
CN702 4P WHT
1 C OUT
2 GND
3 Y OUT
4 COMP OUT
TO VA-41 BOARD
W362
(See page 108.)
W701 33P
S1 OUT
DC OUT
Y OUT
S2 OUT
GND (A)
AGC CONT
AGC CONT
CLP 0
ID
CLP 3
XDL 2
XDL 1
CLP 2
GND (A)
TG CL OUT
5V
HD
VD
SYNC
LALT
BF
BLK
5V
SG CL OUT
GND (D)
4FSC
GND (D)
5V (D)
BACK LIGHT
E N
CAM STB
CLK
DATA TO SLVE
CN703 15P
EN
DATA TO SLAVE
CLK
CAM STB
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
TO SS-86 BOARD
W004
(See page 116.)
W622
GND
4FSC
CHASSIS
Y GAIN
C2 GAIN
Y1 GAIN
C1 GAIN
R GAIN
B GAIN
CHROMA LEVEL
B-Y HUE
R-Y HUE
B-Y GAIN
R-Y GAIN
CHROMA BLANKING LEVEL
SHP LEVEL
Y LEVEL
WHITE CLIP
SET UP
SYNC LEVEL
HUE
BURST LEVEL
CHARACTER
X2

VC-38 (AUTO WHITE BALANCE) PRINTED WIRING BOARD

– Ref. No. VC-38 BOARD: 1,000 series –


AF BLOCK UNIT
V+
A OUT
VD
B OUT
V−
BRN
RED
ORG
YEL
BLU
IRED −
IRED +
BLK
RED


AF BOARD
PUL4002 (BRN)
1 IRED + RED
2 IRED − BLK
PUL4001 (WHT)
1 V+ BRN
2 A OUT RED
3 VD ORG
4 B OUT YEL
5 V− BLU
PUL4003 (BRN)
1 F. MOTOR +
2 F. MOTOR −
PUL4004 (BRN)
1 WIDE
2 TELE
CN4005 (BRN)
1 5V OUT
2 W SW
3 T SW
4 AF GND
5 AF CONT
6 5V IN
7 V BATT
8 BATT GND

Note on Printed Wiring Board:

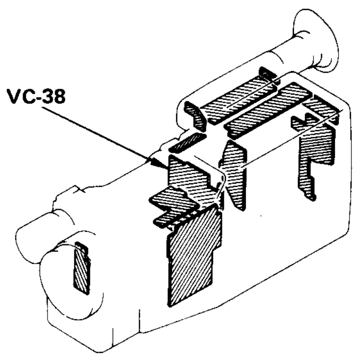
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.

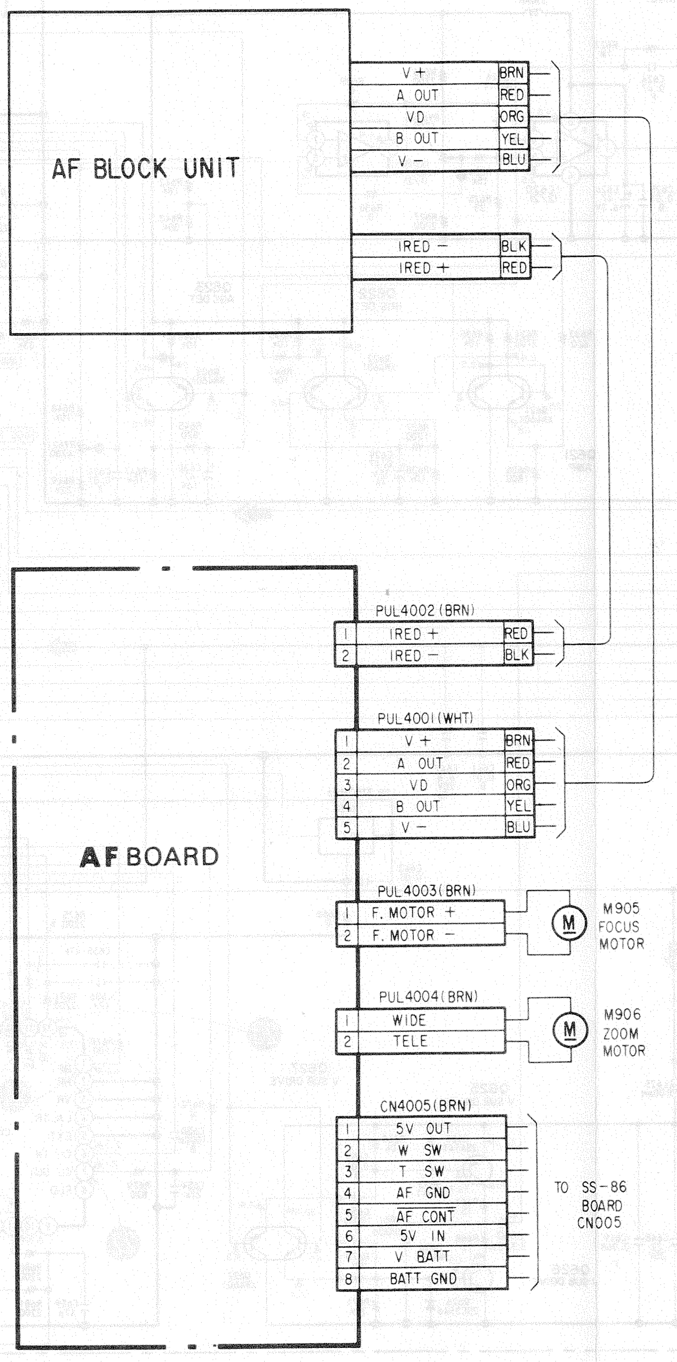
Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (VC-38: Q850, Q851, Q852, Q855, Q856, Q868, Q869) is transistor with resistor.
  Refer to the VC-38 board schematic diagram for digital transistor.



VC-38 (AUTO WHITE BALANCE) PRINTED WIRING BOARD

– Ref. No. VC-38 BOARD: 1,000 series –


AF BLOCK UNIT
V +
A OUT
VD
B OUT
V –
BRN
RED
ORG
YEL
BLU
IRED –
IRED +
BLK
RED
AF BOARD
PUL4002 (BRN)
1 IRED + RED
2 IRED – BLK
PUL4001 (WHT)
1 V + BRN
2 A OUT RED
3 VD ORG
4 B OUT YEL
5 V – BLU
PUL4003 (BRN)
1 F. MOTOR +
2 F. MOTOR –
M905
FOCUS
MOTOR
PUL4004 (BRN)
1 WIDE
2 TELE
M906
ZOOM
MOTOR
CN4005 (BRN)
1 5V OUT
2 W SW
3 T SW
4 AF GND
5 AF CONT
6 5V IN
7 V BATT
8 BATT GND
TO SS-86
BOARD
CN005

Note on Printed Wiring Board:

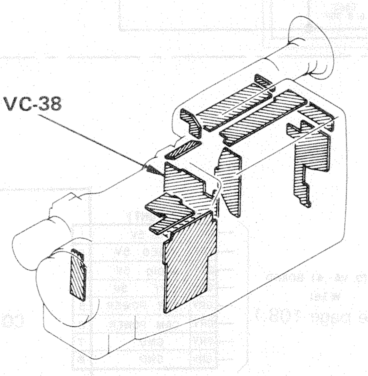
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.

Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

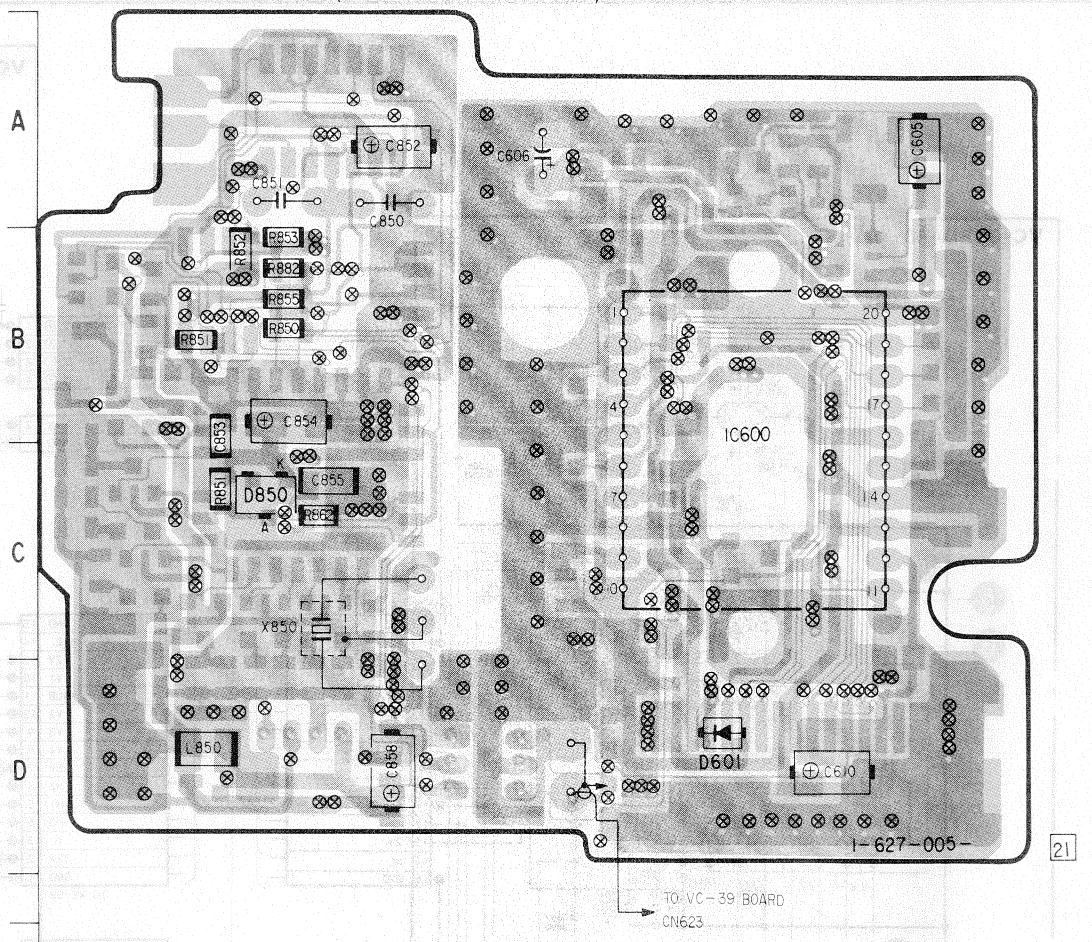
- Digital transistor (VC-38: Q850, Q851, Q852, Q855, Q856, Q868, Q869) is transistor with resistor. Refer to the VC-38 board schematic diagram for digital transistor.



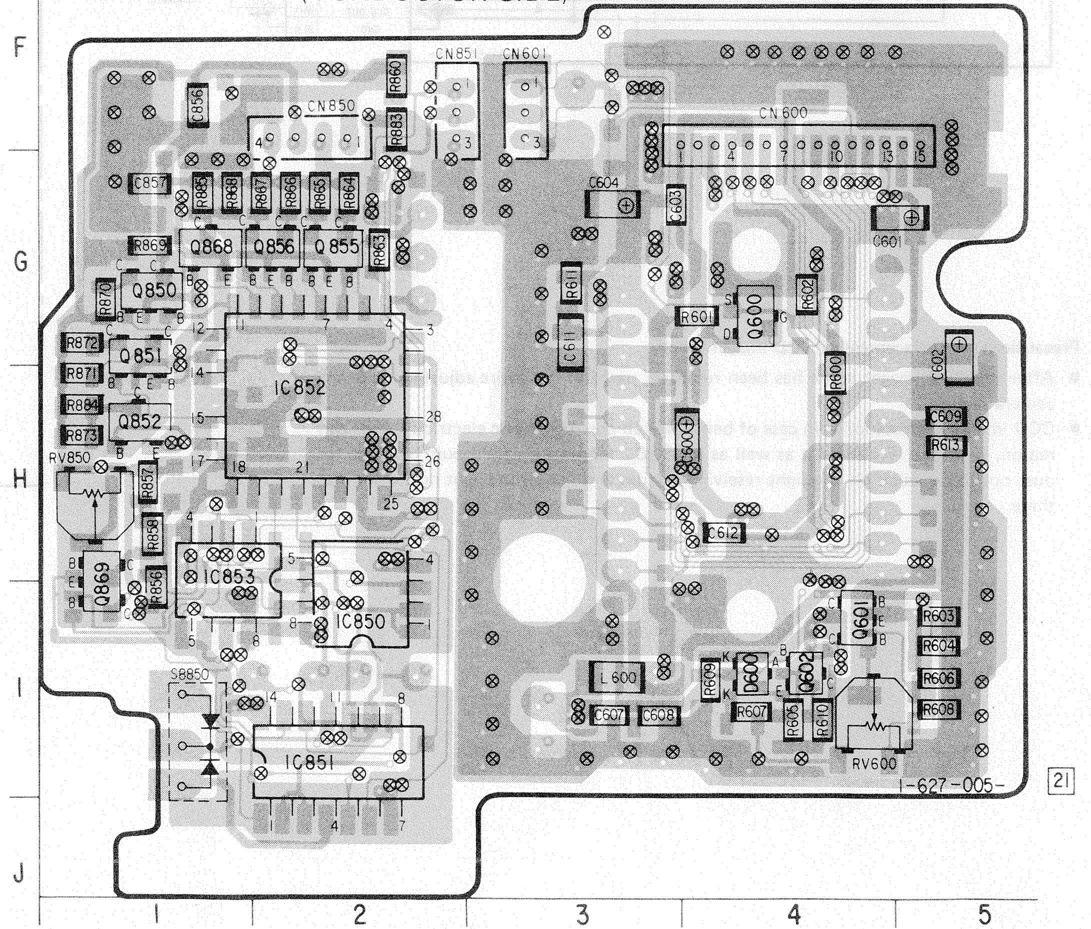
VC-38 BOARD

CN600	F-4
CN601	F-3
CN850	F-2
CN851	F-3
D600	I-4
D601	D-4
D850	C-2
IC850	I-2
IC851	I-2
IC852	H-2
IC853	I-2
Q600	G-4
Q601	I-4
Q602	I-4
Q850	G-1
Q851	G-1
Q852	H-1
Q855	G-2
Q856	G-2
Q868	G-1
Q869	H-1
RV600	I-4
RV850	H-1

VC-38 BOARD (COMPONENT SIDE)

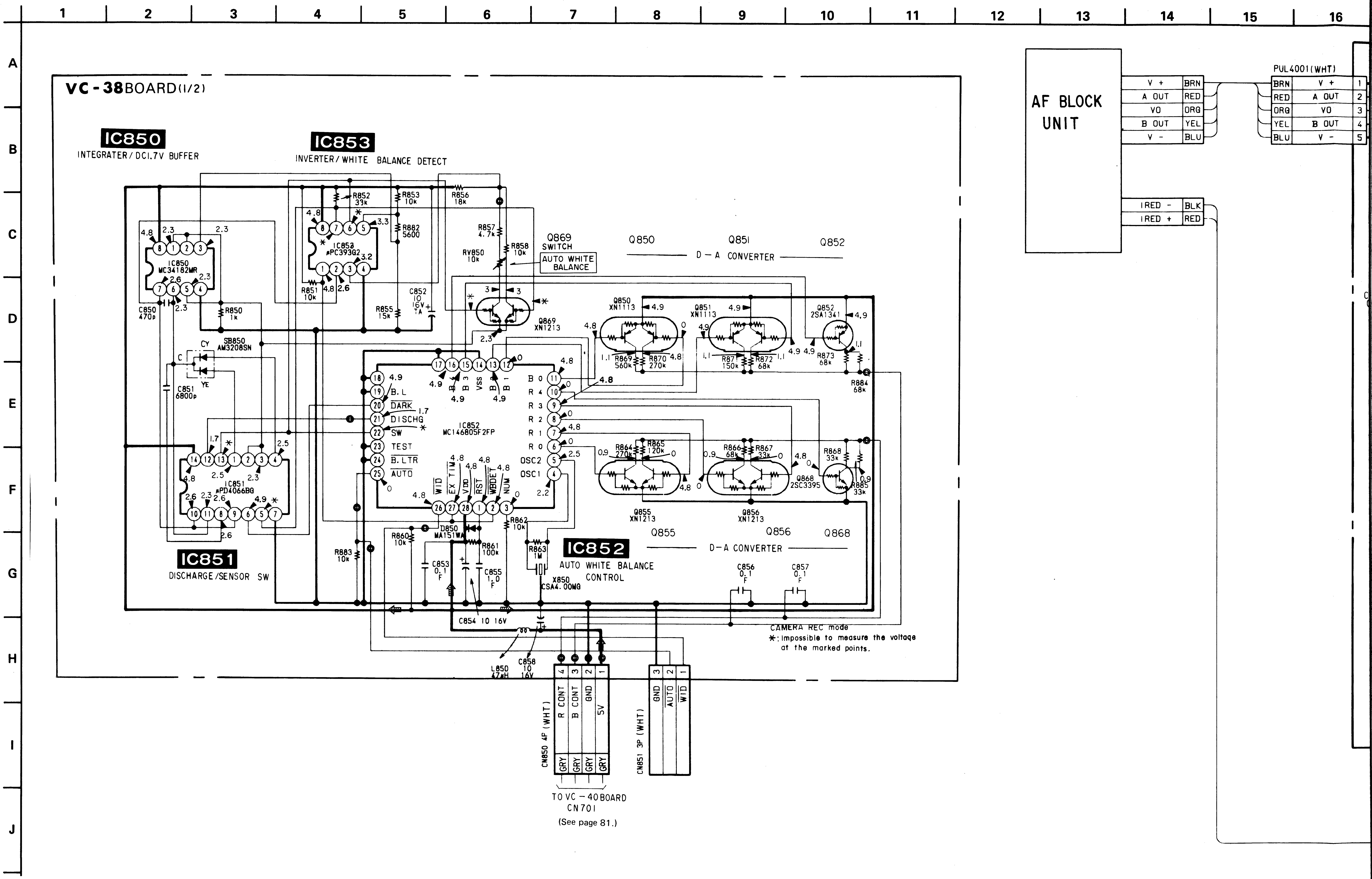

A
B
C
D
E
C852
C851
C850
C606
C605
R853
R882
R855
R850
R852
R851
C854
C853
D850
C855
R862
IC600
X850
L850
C858
D601
C610
1-627-005-
21
TO VC-39 BOARD
CN623

VC-38 BOARD (CONDUCTOR SIDE)


F
G
H
I
J
CN851
CN601
CN850
CN600
C856
C857
R860
R883
Q868
Q856
Q855
Q850
Q851
Q852
R869
R870
R872
R871
R884
R873
RV850
IC852
IC853
IC850
IC851
S8850
Q869
C604
C603
C601
R611
C611
R601
Q600
R602
R600
C602
C609
R613
C612
Q601
R603
R604
R606
R608
L600
C607
C608
R607
R609
R605
R610
D600
Q602
RV600
1-627-005-
21
1
2
3
4
5

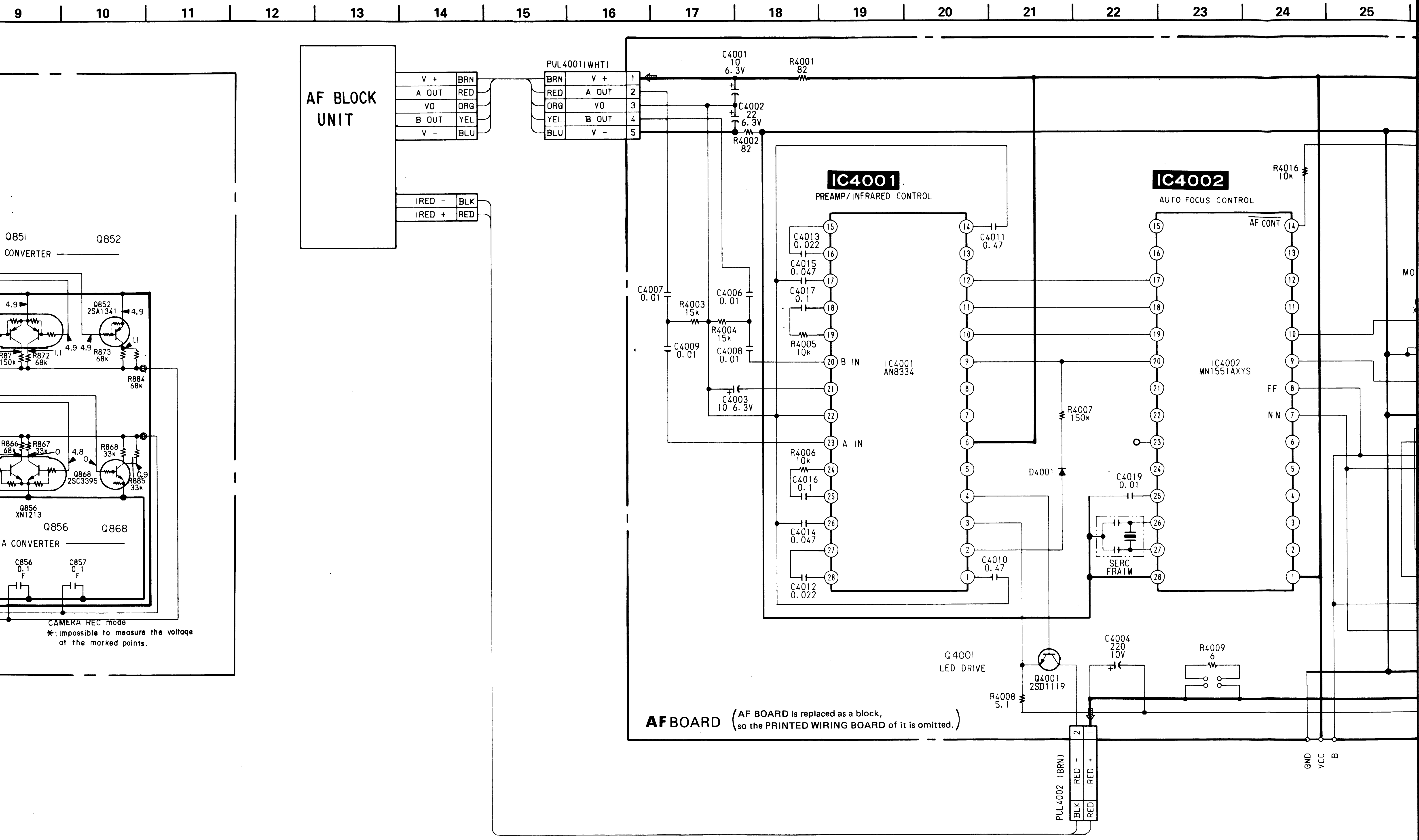
VC-38 (AUTO WHITE BALANCE) SCHEMATIC DIAGRAM

– Ref. No. VC-38 BOARD: 1,000 series –


VC-38 BOARD (1/2)
IC850
INTEGRATER / DC1.7V BUFFER
IC850 MC34182MR
IC853
INVERTER / WHITE BALANCE DETECT
IC853 μPC393G2
IC851
DISCHARGE / SENSOR SW
IC851 μPD4066BG
IC852
AUTO WHITE BALANCE CONTROL
IC852 MC146805F2FP
B.L
DARK
DISCHG
SW
TEST
B.LTR
AUTO
WID
EX TIM
VDD
RST
WBDET
NUM
VSS
B 3
B 2
B 1
B 0
R 4
R 3
R 2
R 1
R 0
OSC2
OSC1
Q869 SWITCH
AUTO WHITE BALANCE
Q869 XN1213
Q850
Q851
Q852
D – A CONVERTER
Q850 XN1113
Q851 XN1113
Q852 2SA1341
Q855
Q856
Q868
Q855 XN1213
Q856 XN1213
Q868 2SC3395
SB850 AM3208SN
CY
C
YE
D850 MA151WA
X850 CSA4.00MG
L850 47μH
C850 470p
C851 6800p
C852 10 16V TA
C853 0.1 F
C854 10 16V
C855 1.0 F
C856 0.1 F
C857 0.1 F
C858 10 16V
R850 1k
R851 10k
R852 33k
R853 10k
R855 15k
R856 18k
R857 4.7k
R858 10k
RV850 10k
R860 10k
R861 100k
R862 10k
R863 1M
R864 270k
R865 120k
R866 68k
R867 33k
R868 33k
R869 560k
R870 270k
R871 150k
R872 68k
R873 68k
R882 5600
R883 10k
R884 68k
R885 33k
AF BLOCK UNIT
V +
A OUT
VO
B OUT
V -
BRN
RED
ORG
YEL
BLU
PUL4001 (WHT)
IRED -
IRED +
BLK
CN850 4P (WHT)
R CONT
B CONT
GND
5V
GRY
CN851 3P (WHT)
AUTO
WID
TO VC-40 BOARD CN701
(See page 81.)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J

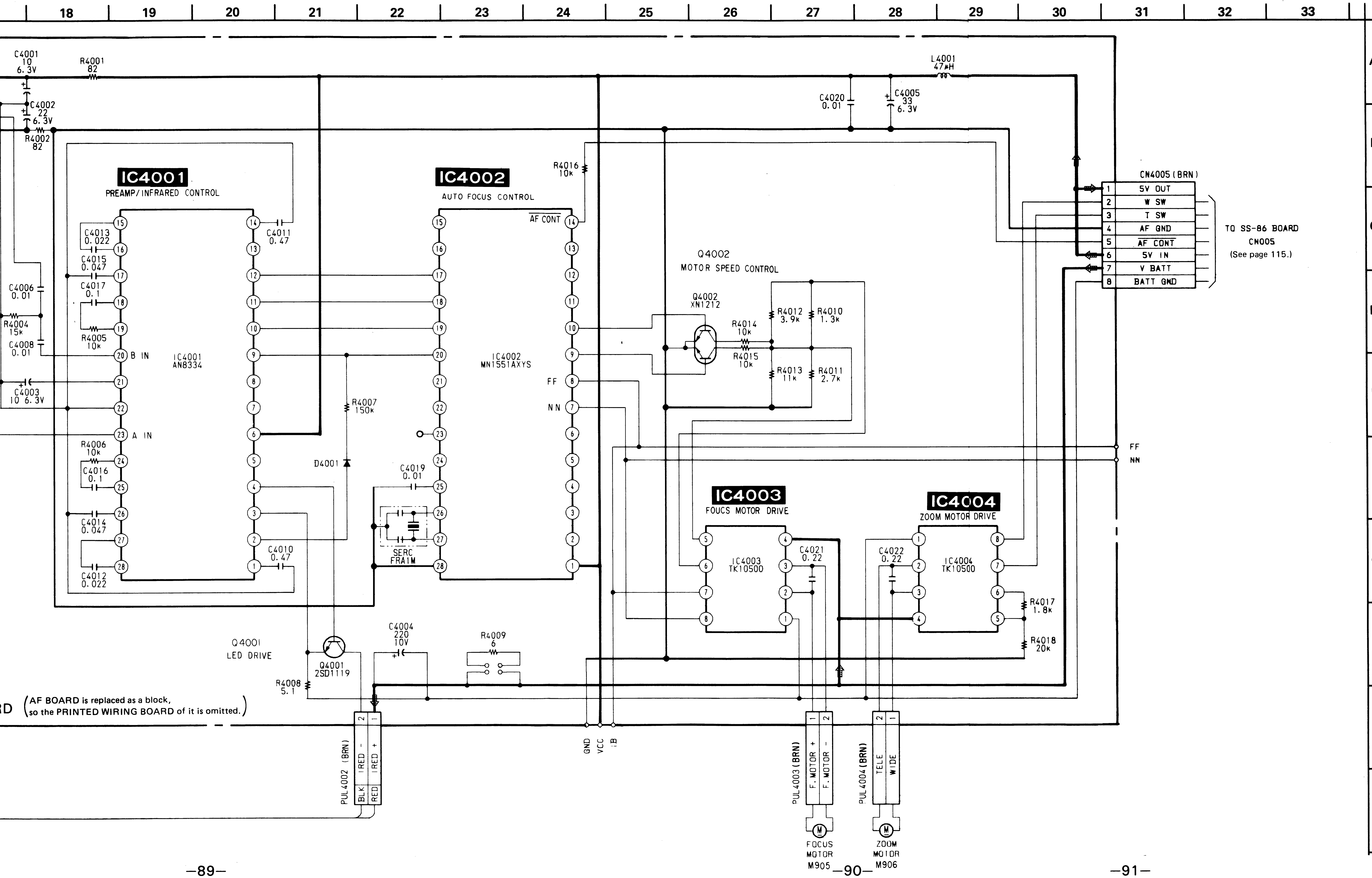
CAMERA REC mode

*: Impossible to measure the voltage at the marked points.


9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
AF BLOCK UNIT
V + BRN
A OUT RED
VO ORG
B OUT YEL
V - BLU
IRED - BLK
IRED + RED
PUL4001(WHT)
C4001 10 6.3V
R4001 82
C4002 22 6.3V
R4002 82
IC4001
PREAMP/INFRARED CONTROL
IC4001 AN8334
B IN
A IN
C4013 0.022
C4015 0.047
C4017 0.1
R4005 10k
C4007 0.01
R4003 15k
C4006 0.01
R4004 15k
C4009 0.01
C4008 0.01
C4003 10 6.3V
R4006 10k
C4016 0.1
C4014 0.047
C4012 0.022
C4011 0.47
C4010 0.47
R4007 150k
D4001
IC4002
AUTO FOCUS CONTROL
IC4002 MN1551AXYS
AF CONT
FF
NN
R4016 10k
C4019 0.01
SERC FRA1M
Q4001 LED DRIVE
Q4001 2SD1119
R4008 5.1
C4004 220 10V
R4009 6
PUL4002 (BRN)
IRED -
IRED +
BLK
RED
GND
VCC
IB
MO
Q851
Q852
CONVERTER
Q852 2SA1341
4.9
1.1
R873 68k
R87 150k
R872 68k
R884 68k
R866 68k
R867 33k
R868 33k
4.8
0.9
Q868 2SC3395
R885 33k
Q856 XN1213
Q856
Q868
A CONVERTER
C856 0.1 F
C857 0.1 F

CAMERA REC mode
*: Impossible to measure the voltage at the marked points.

AF BOARD (AF BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.)


18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
A
B
C
D
E
F
G
H
I
J
C4001 10 6.3V
R4001 82
C4002 22 6.3V
R4002 82
IC4001
PREAMP/INFRARED CONTROL
IC4001 AN8334
B IN
A IN
C4013 0.022
C4015 0.047
C4017 0.1
R4005 10k
C4006 0.01
R4004 15k
C4008 0.01
C4003 10 6.3V
R4006 10k
C4016 0.1
C4014 0.047
C4012 0.022
C4011 0.47
C4010 0.47
IC4002
AUTO FOCUS CONTROL
IC4002 MN1551AXYS
AF CONT
FF
NN
R4016 10k
R4007 150k
D4001
C4019 0.01
SERC FRAIM
Q4001 LED DRIVE
Q4001 2SD1119
R4008 5.1
C4004 220 10V
R4009 6
Q4002 MOTOR SPEED CONTROL
Q4002 XN1212
R4014 10k
R4015 10k
R4012 3.9k
R4010 1.3k
R4013 11k
R4011 2.7k
C4020 0.01
C4005 33 6.3V
L4001 47μH
CN4005 (BRN)
1 5V OUT
2 W SW
3 T SW
4 AF GND
5 AF CONT
6 5V IN
7 V BATT
8 BATT GND
TO SS-86 BOARD CN005 (See page 115.)
FF
NN
IC4003
FOUCS MOTOR DRIVE
IC4003 TK10500
C4021 0.22
IC4004
ZOOM MOTOR DRIVE
IC4004 TK10500
C4022 0.22
R4017 1.8k
R4018 20k
RD
(AF BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.)
PUL4002 (BRN)
IRED -
IRED +
BLK
RED
GND
VCC
iB
PUL4003 (BRN)
F. MOTOR +
F. MOTOR -
FOCUS MOTOR M905
PUL4004 (BRN)
TELE
WIDE
ZOOM MOTOR M906

DIGITAL TITLER

SS-86 (DIGITAL TITLER) PRINTED WIRING BOARD

– Ref. No. SS-86 BOARD: 2,000 series –

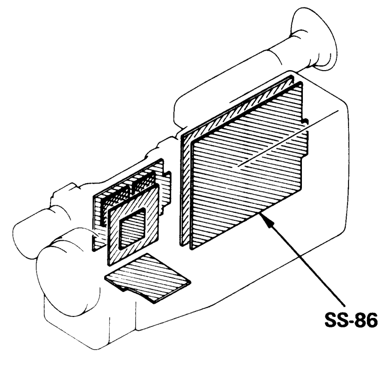
Note:

- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

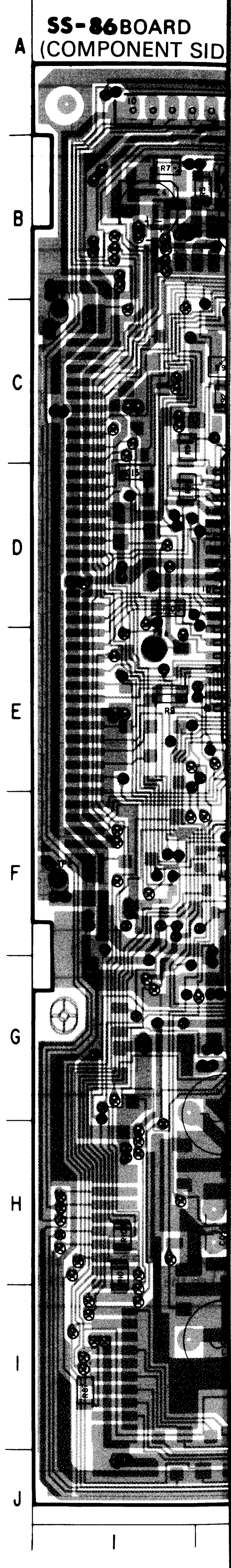
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (SS-86: Q203, Q204, Q205, Q206) is transistor with resistor. Refer to the SS-86 board schematic diagram for digital transitor.



CN001	D·5
CN002	D·7
CN003	C·1 0
CN004	A·1 1
CN005	I-13
CN006	B·1 4
CN007	H·16
CT200	G-12
D003	E-15
D004	F-15
D050	I-15
D051	H-15
D200	I-6
D201	G-5
D203	G-11
IC001	D·2
IC002	B·15
IC003	F·4
IC004	F·5
IC005	B·3
IC006	E·6
IC007	F·7
IC200	H·10
IC201	H·12
IC202	H-4
IC203	I·7
IC301	C·6
Q001	B·2
Q002	B-15
Q005	B·13
Q006	G-15
Q007	E·10
Q008	G·14
Q051	H·15
Q052	H·15
Q053	G-2
Q054	E·6
Q055	F·2
Q070	F-3
Q071	F·15
Q073	F·15
Q074	F·15
Q076	F·14
Q078	F·14
Q079	F·15
Q080	F·14
Q081	F·2
Q201	I-7
Q202	I·7
Q203	I·5
Q204	H·7
Q205	H·7
Q206	G-11
Q302	C·4
Q303	C·13
Q304	B-11
Q305	B-5
Q307	C·11
Q308	A-10
Q309	A-6
Q310	A-11
Q311	A-12
Q312	A-12
Q313	B-12
Q314	B-12
Q315	B-12
Q316	A-12
Q317	C-11
Q318	C-11
Q319	D-15
Q320	C-5
Q321	E-15
RV001	C·14
RV002	D·15
RV200	I·9
RV301	A·9
RV302	B·9
RV306	A-12
TP001	C·1
TP002	F·1
TP003	G-8
TP004	D-8
TP006	E·1
TP007	E·4
TP303	C-23

SS-86 BOARD
(COMPONENT SID



DIGITAL TITLER

SS-86 (DIGITAL TITLER) PRINTED WIRING BOARD

– Ref. No. SS-86 BOARD: 2,000 series –

Note:

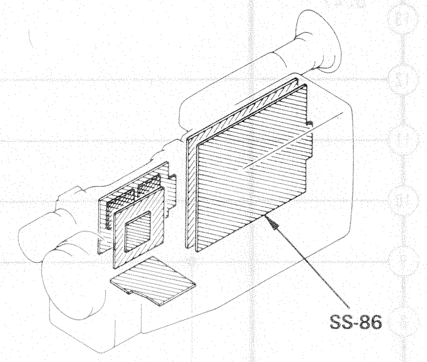
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.

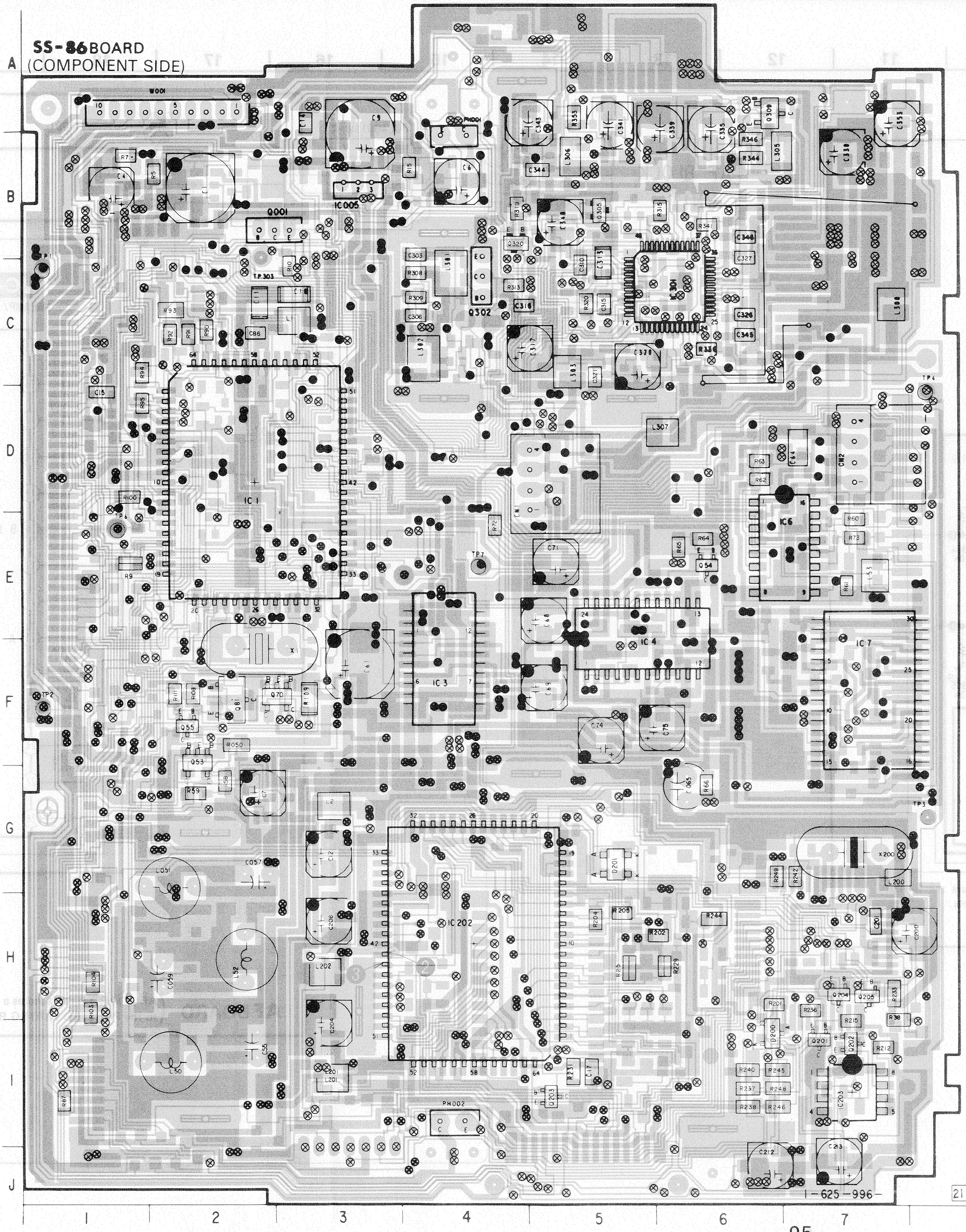
Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

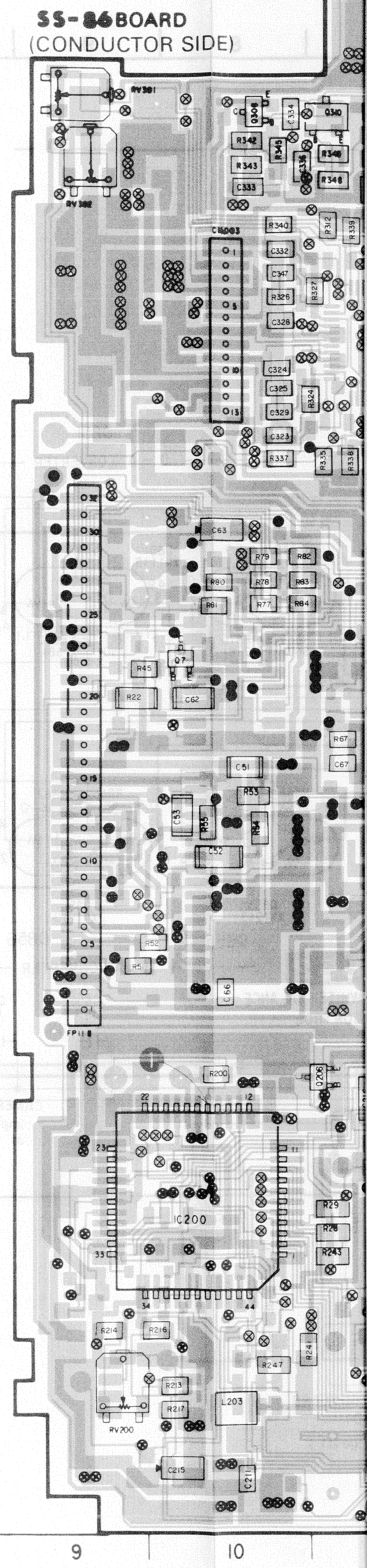
- Digital transistor (SS-86: Q203, Q204, Q205, Q206) is transistor with resistor.
  Refer to the SS-86 board schematic diagram for digital transitor.



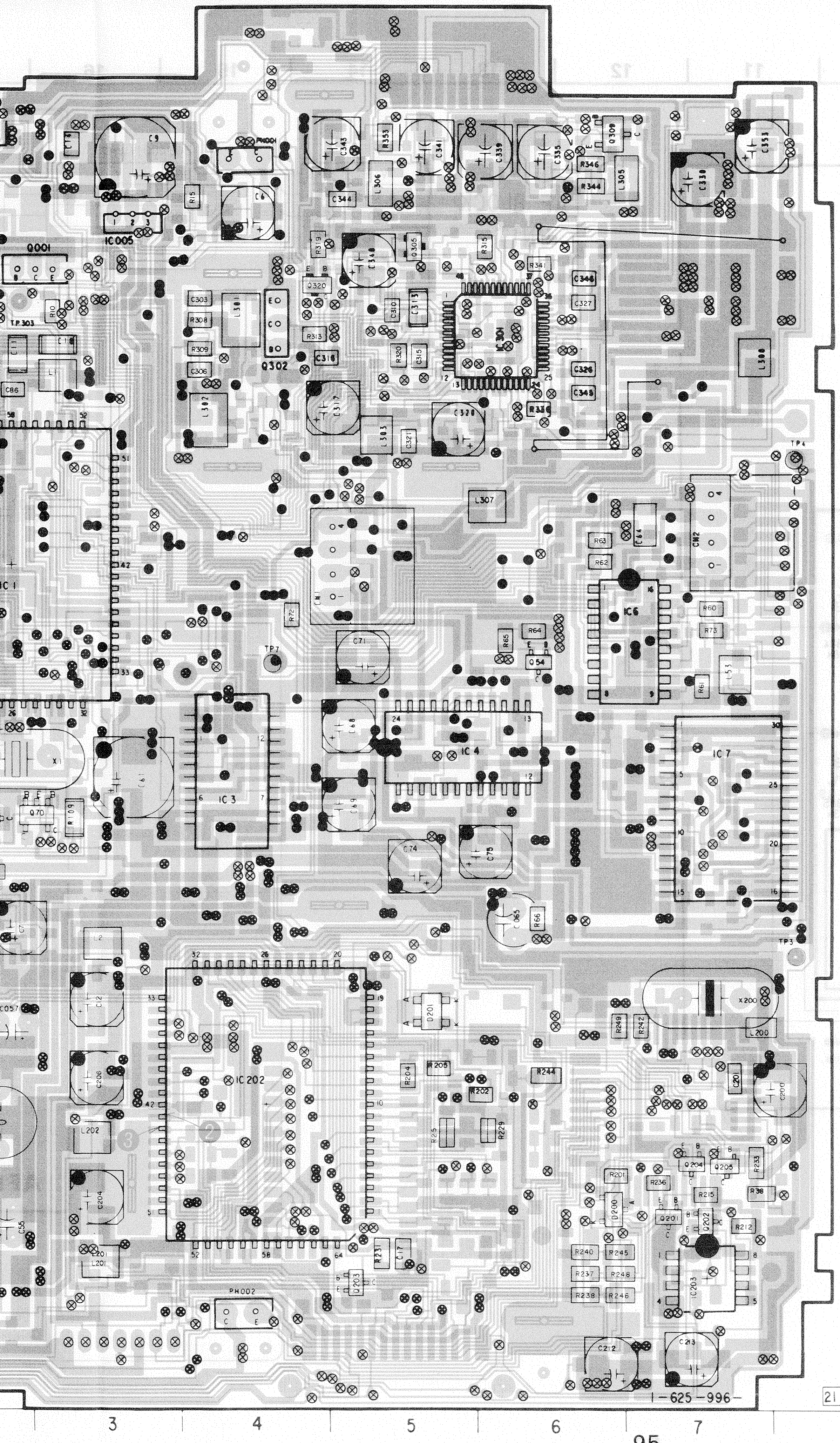
CN001	D-5
CN002	D-7
CN003	C-10
CN004	A-11
CN005	I-13
CN006	B-14
CN007	H-16
CT200	G-12
D003	E-15
D004	F-15
D050	I-15
D051	H-15
D200	I-6
D201	G-5
D203	G-11
IC001	D-2
IC002	B-15
IC003	F-4
IC004	F-5
IC005	B-3
IC006	E-6
IC007	F-7
IC200	H-10
IC201	H-12
IC202	H-4
IC203	I-7
IC301	C-6
Q001	B-2
Q002	B-15
Q005	B-13
Q006	G-15
Q007	E-10
Q008	G-14
Q051	H-15
Q052	H-15
Q053	G-2
Q054	E-6
Q055	F-2
Q070	F-3
Q071	F-15
Q073	F-15

Q074	F-15
Q076	F-14
Q078	F-14
Q079	F-15
Q080	F-14
Q081	F-2
Q201	I-7
Q202	I-7
Q203	I-5
Q204	H-7
Q205	H-7
Q206	G-11
Q302	C-4
Q303	C-13
Q304	B-11
Q305	B-5
Q307	C-11
Q308	A-10
Q309	A-6
Q310	A-11
Q311	A-12
Q312	A-12
Q313	B-12
Q314	B-12
Q315	B-12
Q316	A-12
Q317	C-11
Q318	C-11
Q319	D-15
Q320	C-5
Q321	E-15
RV001	C-14
RV002	D-15
RV200	I-9
RV301	A-9
RV302	B-9
RV306	A-12
TP001	C-1
TP002	F-1
TP003	G-8
TP004	D-8
TP006	E-1
TP007	E-4
TP303	C-23

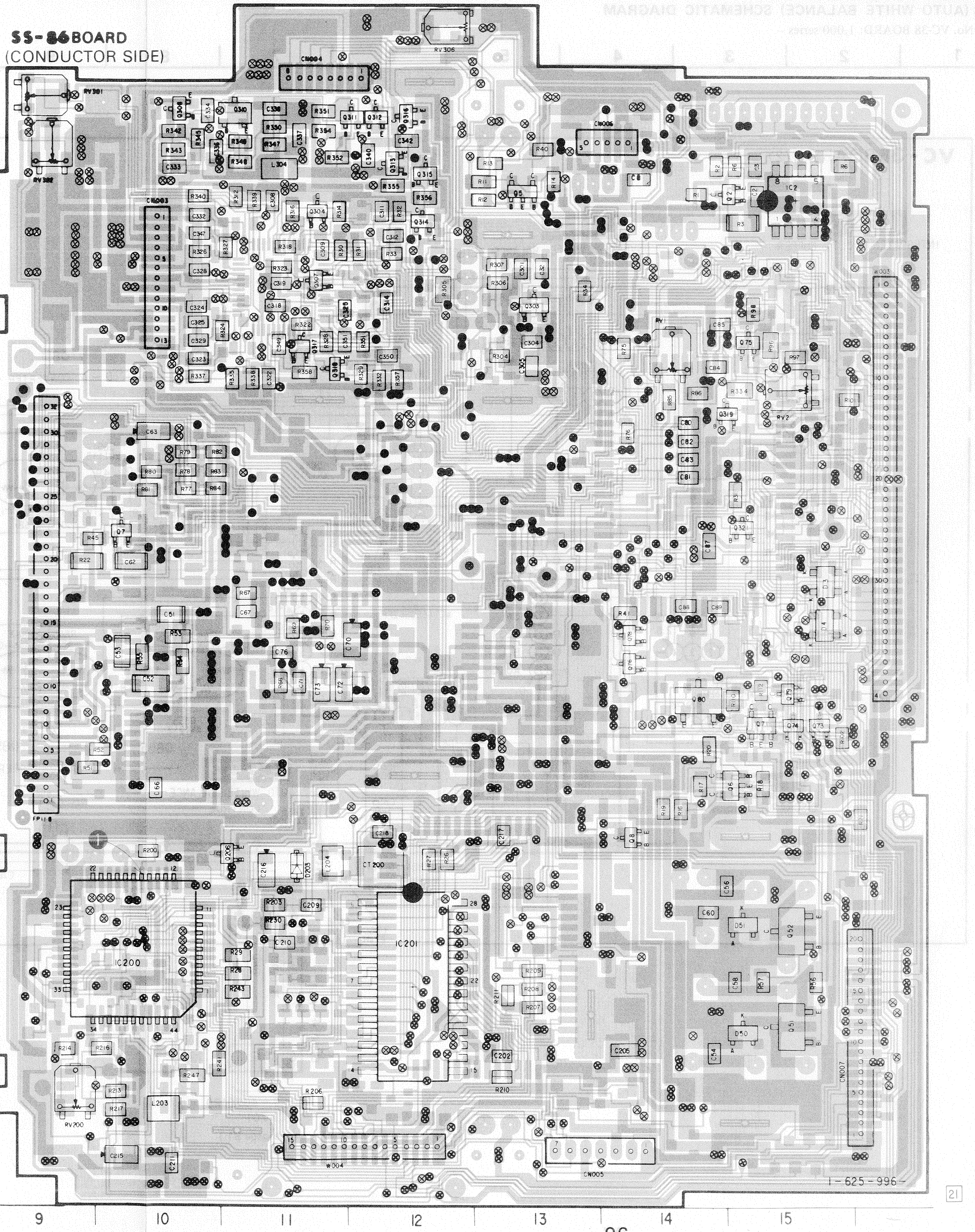

SS-86BOARD (COMPONENT SIDE)
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
IC1
IC3
IC4
IC6
IC7
IC202
IC005
Q001
Q302
W001
TP1
TP2
TP3
TP4
TP7
TP303
PH001
PH002
X200
1-625-996-
21


SS-86BOARD (CONDUCTOR SIDE)
9
10
IC200
RV301
RV302
RV200
CN003
L203

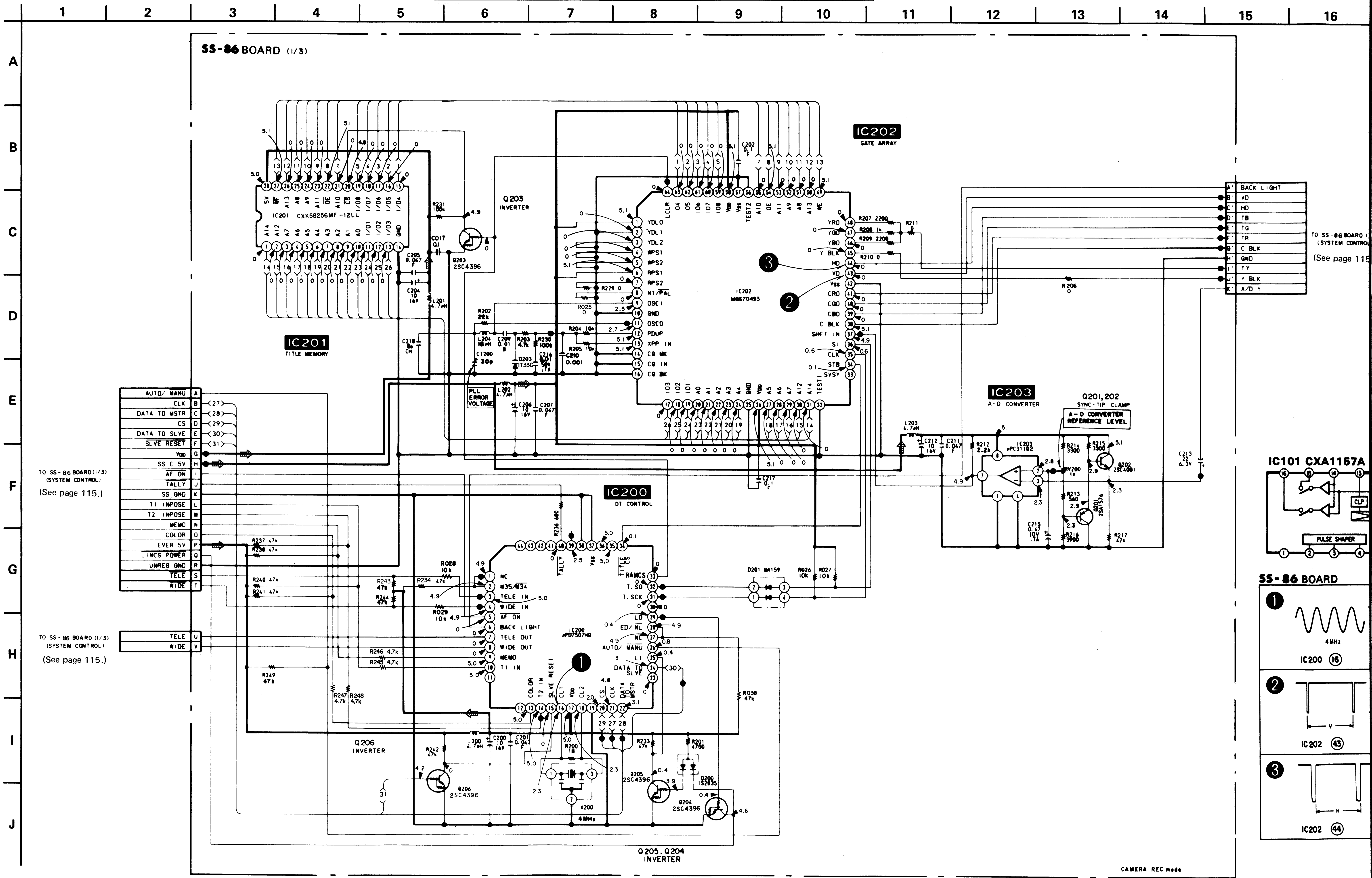
SS-86 BOARD
(CONDUCTOR SIDE)

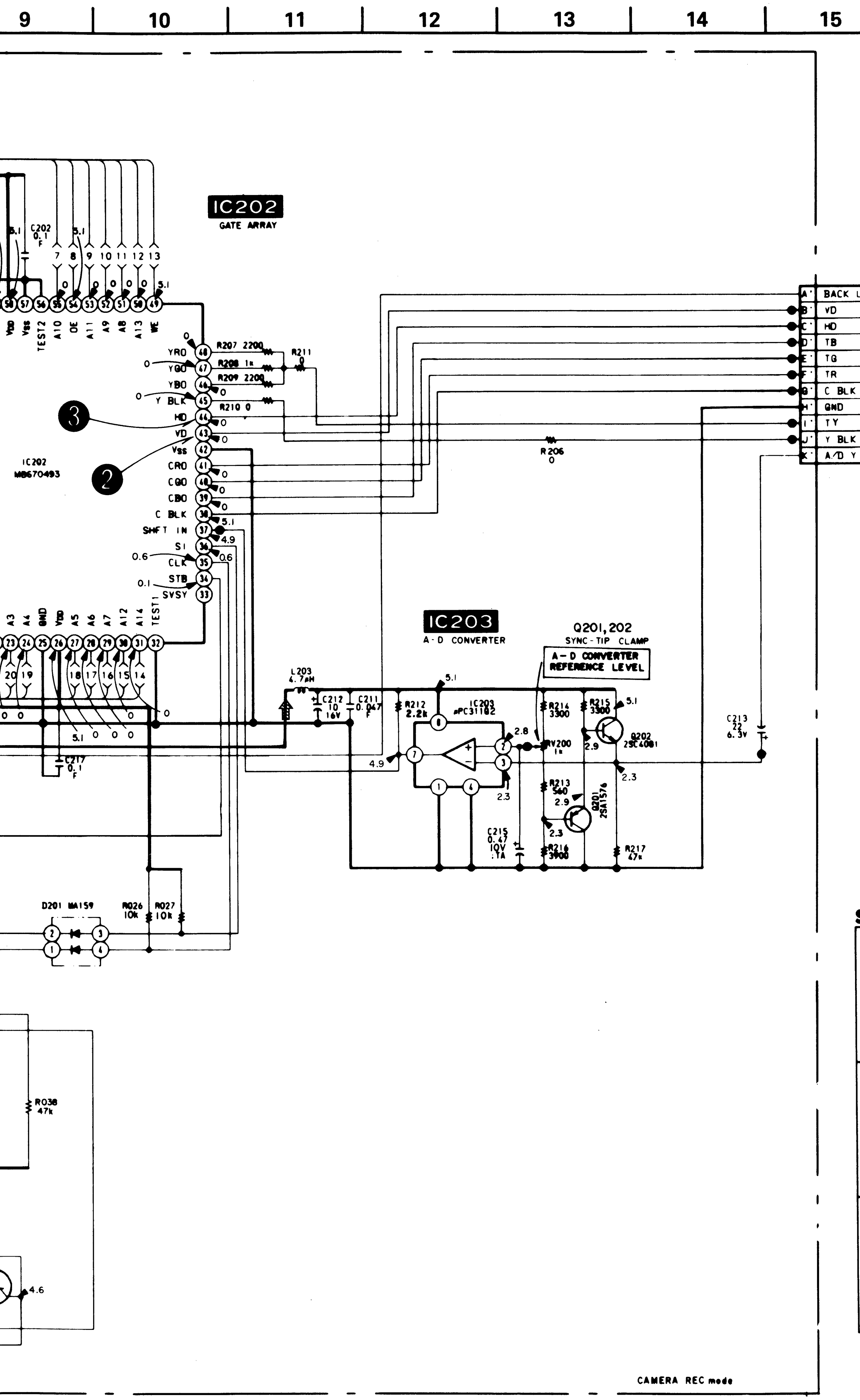


IC1
IC3
IC4
IC5
IC6
IC7
IC202
IC005
Q001
Q302
X200
TP3
TP4
TP7
PH001
PH002
CN1
CN2
1-625-996-
21
3
4
5
6
7
8

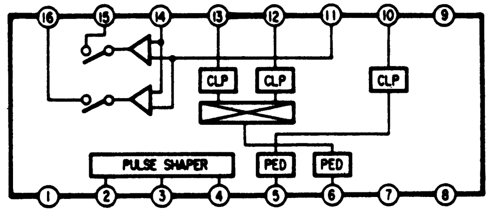


RV301
RV302
RV306
RV200
RV2
CN004
CN005
CN006
CN007
W003
W004
IC2
IC200
IC201
IC301
IC003
CT200
FP11.0
1-625-996-
21
9
10
11
12
13
14
15

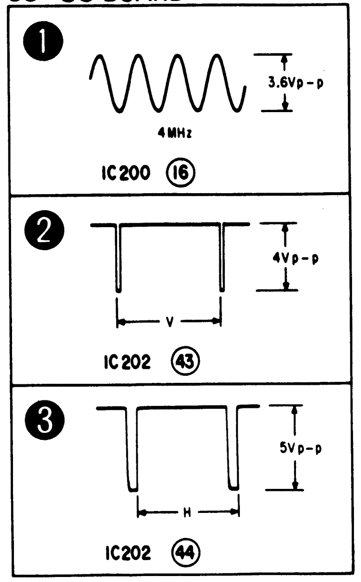

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
SS-86 BOARD (1/3)
IC201
TITLE MEMORY
IC201 CXK58256MF-12LL
Q203
INVERTER
2SC4396
IC202
GATE ARRAY
IC202
MB670493
IC203
A-D CONVERTER
μPC3118Z
Q201, 202
SYNC-TIP CLAMP
A-D CONVERTER REFERENCE LEVEL
Q201 2SA1576
Q202 2SC4081
IC200
DT CONTROL
IC200
μPD7507HG
PLL ERROR VOLTAGE
D201 MA159
Q206
INVERTER
2SC4396
Q205, Q204
INVERTER
Q205 2SC4396
Q204 2SC4396
D200 1S2835
X200
4MHz
AUTO/ MANU
CLK
DATA TO MSTR
CS
DATA TO SLVE
SLVE RESET
VDD
SS C 5V
AF ON
TALLY
SS GND
T1 IMPOSE
T2 IMPOSE
MEMO
COLOR
EVER 5V
LINCS POWER
UNREG GND
TELE
WIDE
TO SS-86 BOARD(1/3)
(SYSTEM CONTROL)
(See page 115.)
TO SS-86 BOARD (1/3)
(SYSTEM CONTROL)
(See page 115.)
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
TO SS-86 BOARD
(SYSTEM CONTROL)
(See page 115
IC101 CXA1157A
CLP
PULSE SHAPER
SS-86 BOARD
❶
4MHz
IC200 ⑯
❷
V
IC202 ㊸
❸
H
IC202 ㊹
CAMERA REC mode


9
10
11
12
13
14
15
16
17
IC202
GATE ARRAY
IC202
MB670493
YRO
YGO
YBO
Y BLK
HD
VD
Vss
CRO
CGO
CBO
C BLK
SHFT IN
SI
CLK
STB
SYSY
R207 2200
R208 1k
R209 2200
R210 0
R211 0
R206 0
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
TO SS-86 BOARD (1/3) (SYSTEM CONTROL)
(See page 115.)
IC203
A-D CONVERTER
Q201,202
SYNC-TIP CLAMP
A-D CONVERTER REFERENCE LEVEL
IC203 μPC3118
L203 4.7μH
C212 10 16V
C211 0.047
R212 2.2k
R214 3300
R215 3300
RV200 1k
Q202 2SC4081
Q201 2SA1576
R213 560
R216 3900
R217 47k
C215 0.47 10V TA
C213 22 6.3V
C217 0.1
D201 MA159
R026 10k
R027 10k
R038 47k
CAMERA REC mode

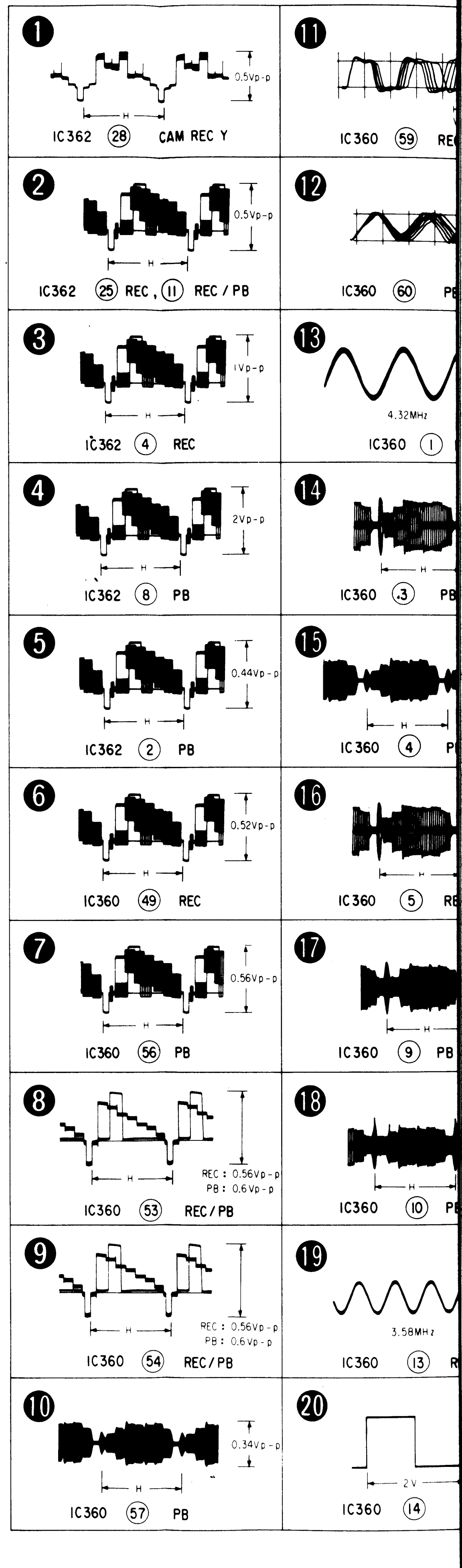
IC101 CXA1157A

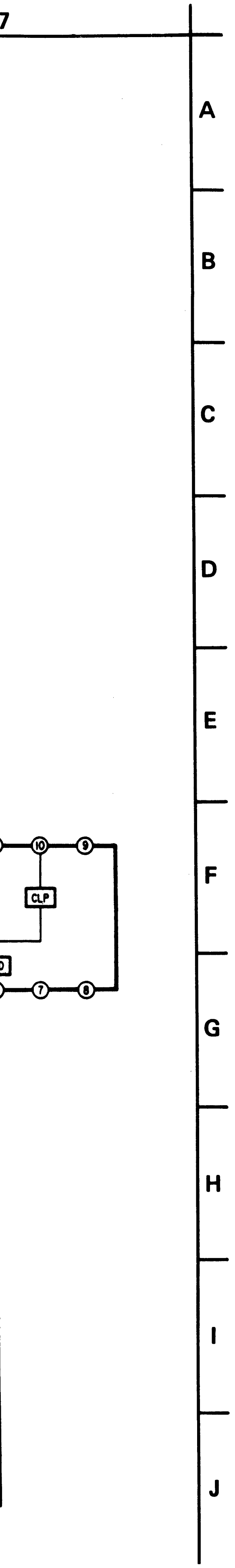

CLP
CLP
CLP
PULSE SHAPER
PED
PED

SS-86 BOARD

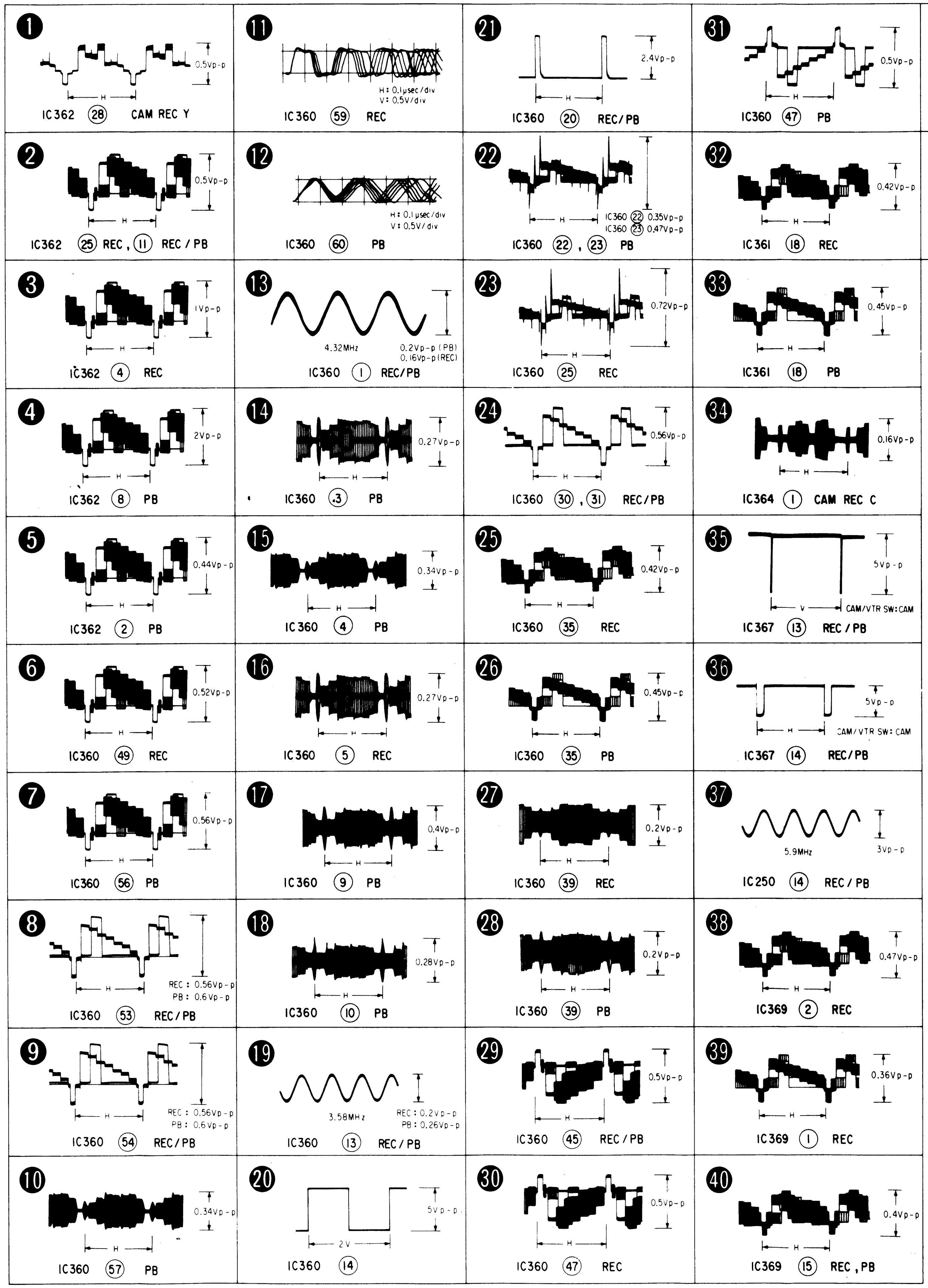


VA-41 BOARD

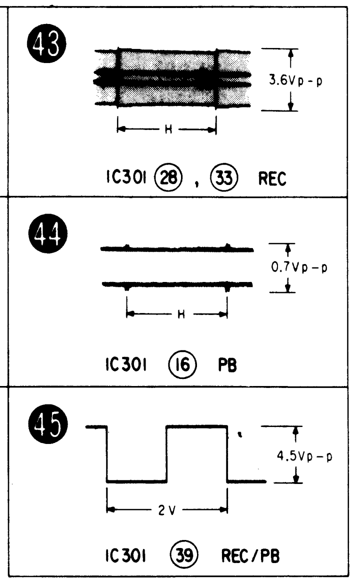



7
A
B
C
D
E
F
G
H
I
J
⑩
⑨
CLP
⑦
⑧

VA-41 BOARD



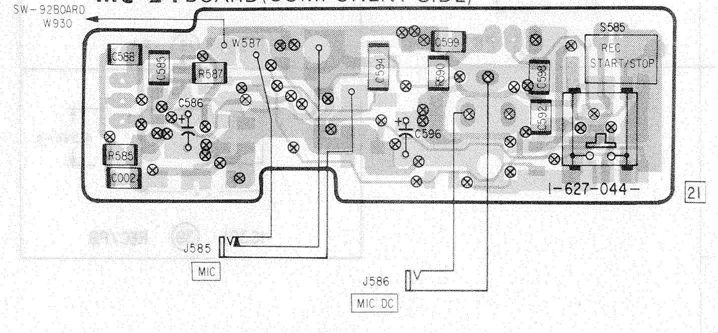
SS-86 BOARD



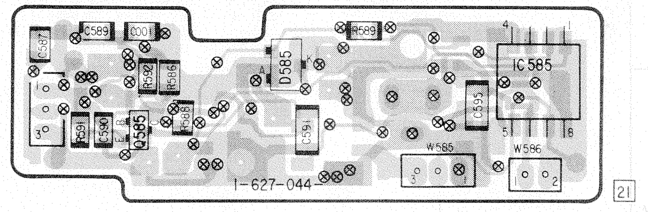
SS-86 (REC/PB AMP), VA-41 (VIDEO/AUDIO SIGNAL PROCESS), MC-24 (MIC AMP, START/STOP SWITCH) PRINTED WIRING BOARDS

– Ref. No. SS-86, MC-24 BOARDS: 2,000 series, VA-41 BOARD: 3,000 series –

MC-24 BOARD(COMPONENT SIDE)


SW-92BOARD
W930
S585
REC
START/STOP
J585
MIC
J586
MIC DC
1-627-044-
21

MC-24 BOARD(CONDUCTOR SIDE)


IC585
D585
W585
W586
1-627-044
21

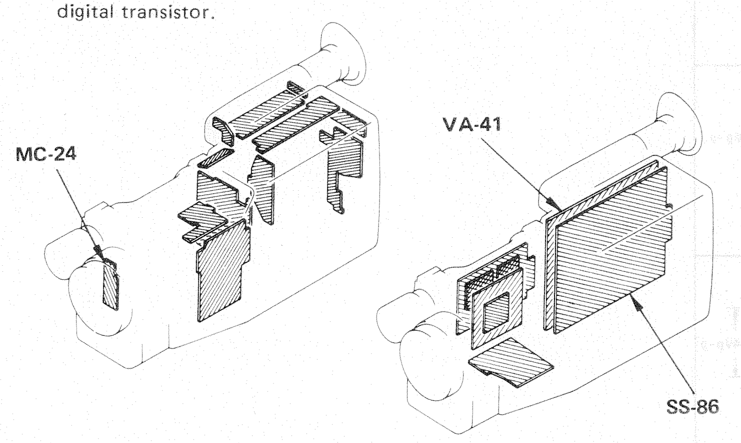
Note:

- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

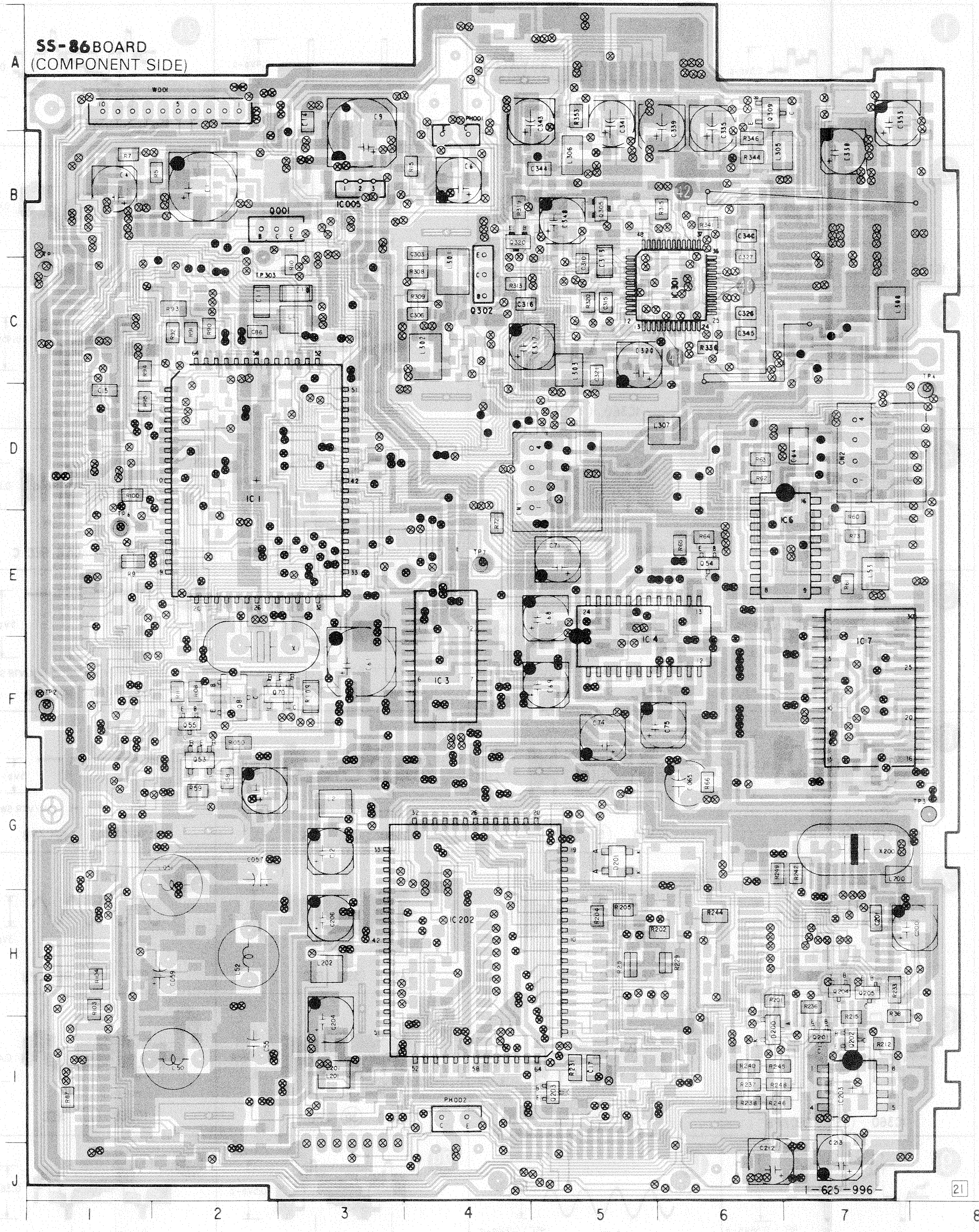
Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

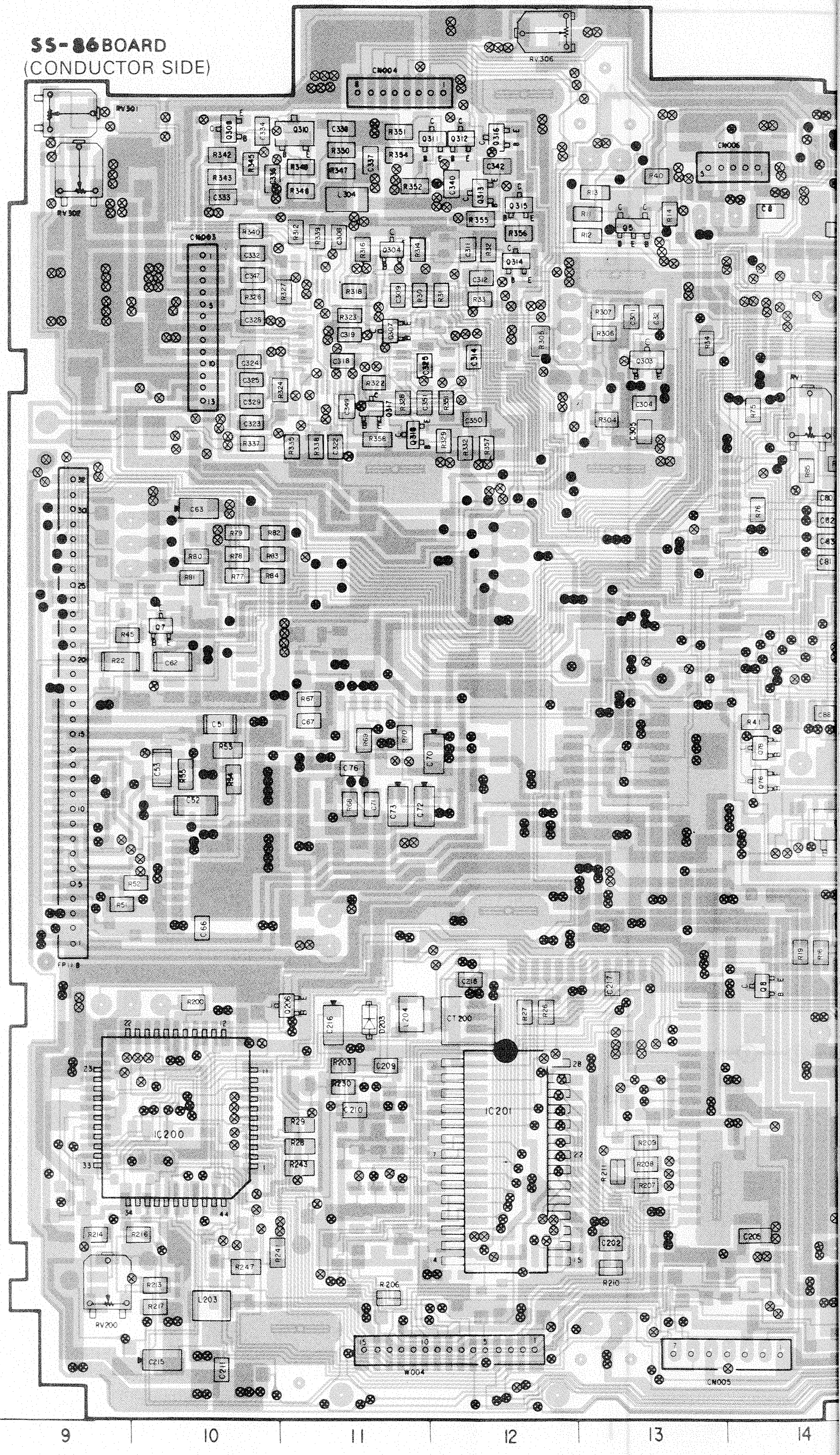
- Digital transistor (SS-86: Q304, Q305, Q307, Q308, Q314, Q315, Q316, Q319, Q321, VA-41: Q254, Q378, Q382, Q395, Q396, Q397, Q398, Q405, Q407, Q413, Q416, Q417, Q418, Q420, Q424) is transistor with resistor.
  Refer to the SS-86, VA-41 boards schematic diagram for digital transistor.


MC-24
VA-41
SS-86

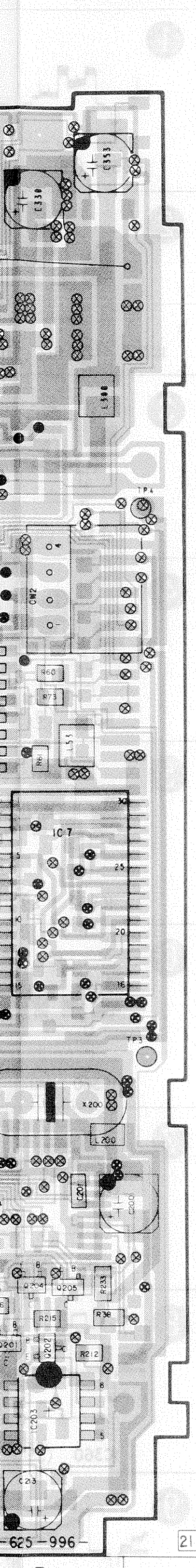
SS-86 BOARD
(COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
IC1
IC3
IC4
IC6
IC7
IC202
IC005
Q001
1-625-996
21

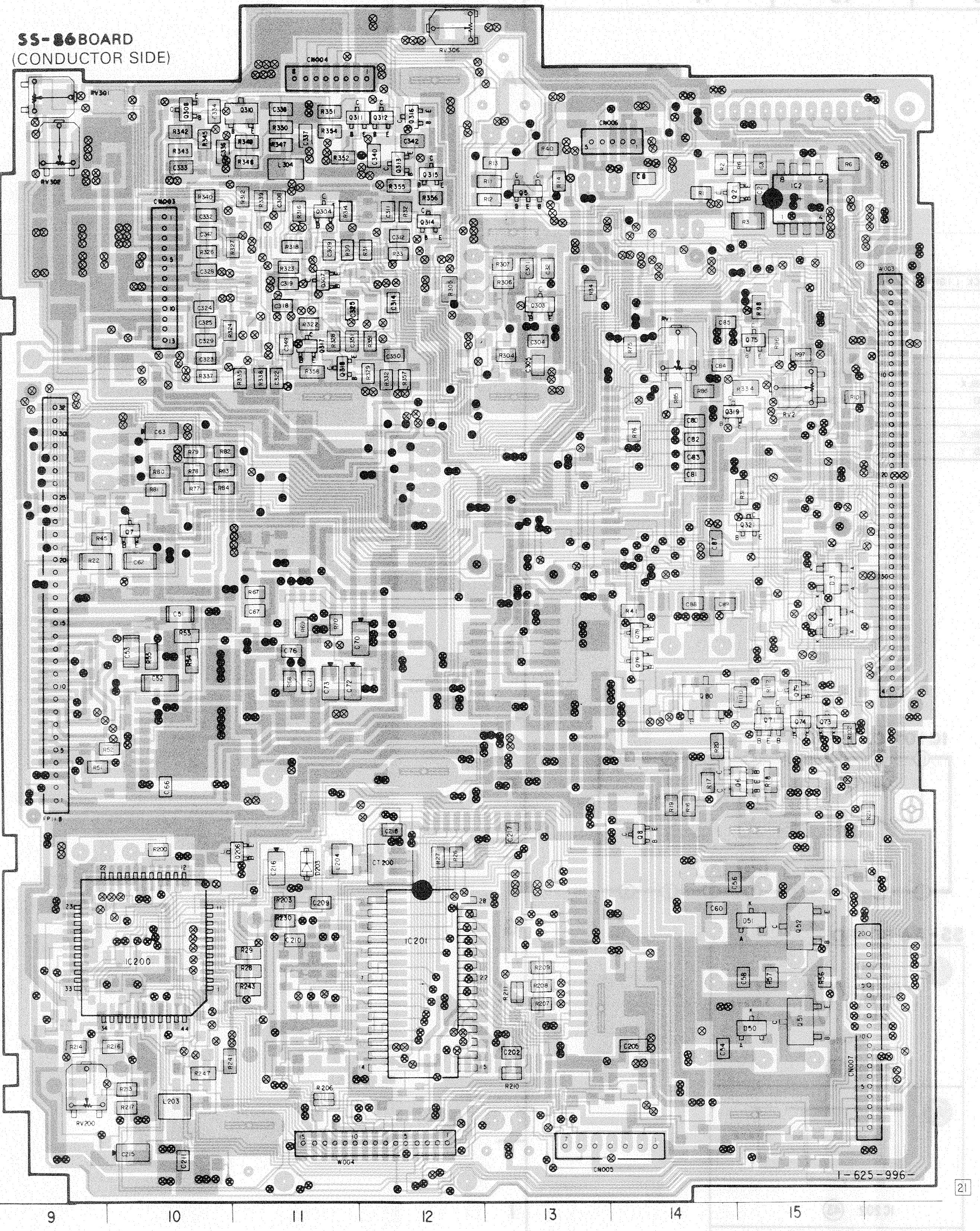
SS-86 BOARD
(CONDUCTOR SIDE)


8
9
10
11
12
13
14
IC200
IC201
CN004
CN006
CN005
W004

CN001	D-5	D008	I-14	IC005	B-3	Q005	B-13	Q073	F-15	Q204	H-7
CN002	D-7	D050	H-15	IC006	E-6	Q006	G-14	Q074	F-15	Q205	H-7
CN003	C-10	D051	H-14	IC007	F-7	Q007	E-10			Q206	G-10
CN004	A-11	D200	H-6	IC200	H-10	Q008	G-14	Q076	F-14		
CN005	I-5	D201	G-5	IC201	H-12	Q051	H-15	Q078	F-14	Q302	C-4
CN006	B-14	D203	D-11	IC202	G-4	Q052	H-15	Q079	F-15	Q303	C-13
CN007	H-16			IC203	I-7	Q053	G-2	Q080	F-14	Q304	C-11
				IC301	C-6	Q054	E-6	Q081	F-2	Q305	B-5
D001	I-14	IC001	D-2			Q055	F-2	Q201	H-7	Q307	C-11
D003	E-15	IC002	B-15	Q001	B-2	Q070	F-3	Q202	I-7	Q317	C-11
D004	F-15	IC003	F-4	Q002	B-14	Q071	F-15	Q203	I-5	Q318	D-11
D007	E-10	IC004	F-5							Q319	D-15

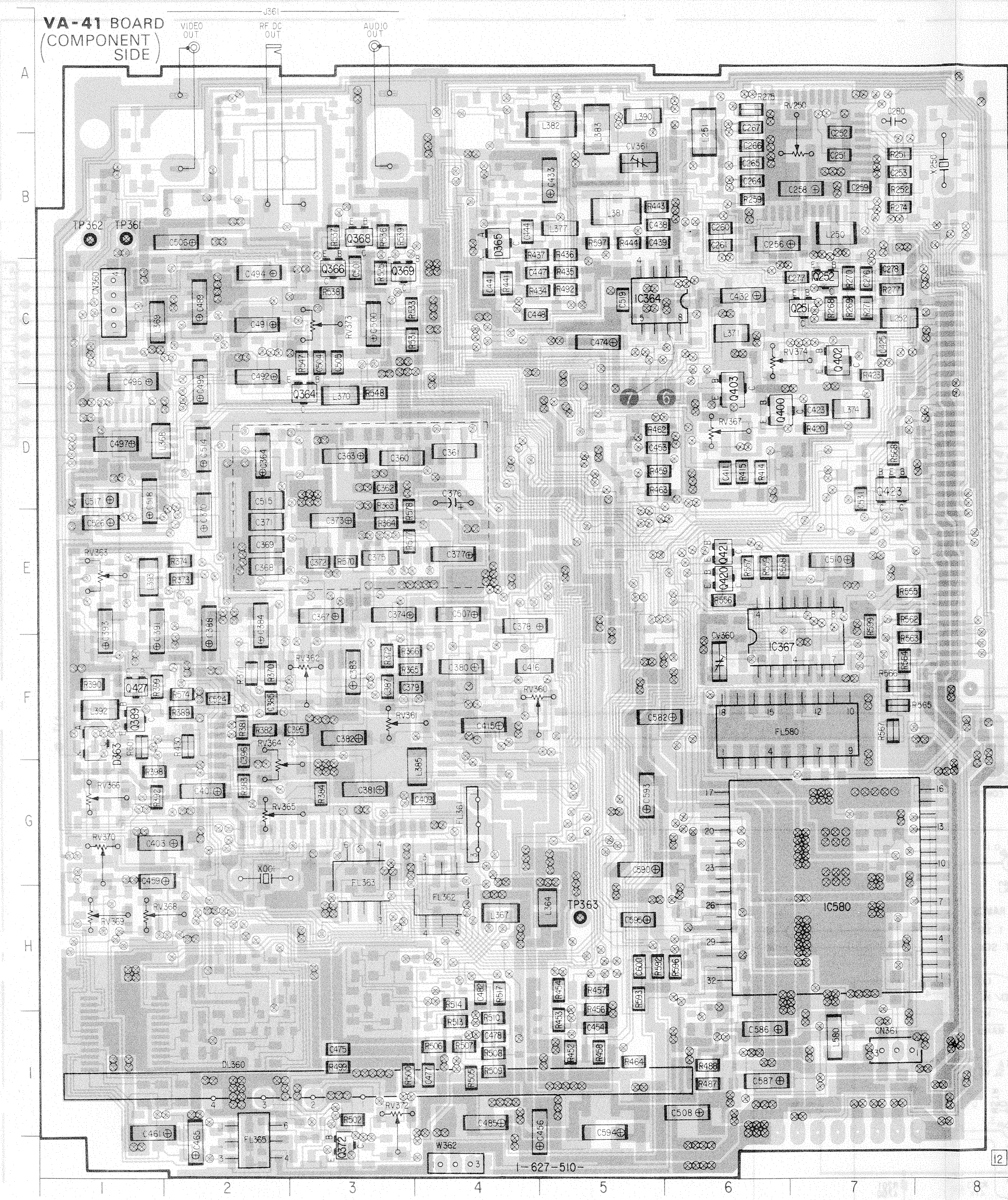


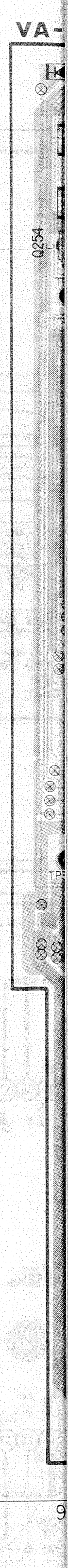
SS-86 BOARD
(CONDUCTOR SIDE)


1-625-996-
21
8
9
10
11
12
13
14
15

CN001	D · 5
CN002	D · 7
CN003	C · 1 0
CN004	A · 1 1
CN005	I · 5
CN006	B · 1 4
CN007	H · 16
D001	I · 14
D003	E · 15
D004	F · 15
D007	E · 10
D008	I · 14
D050	H · 15
D051	H · 14
D200	H · 6
D201	G · 5
D203	D · 11
IC001	D · 2
IC002	B · 15
IC003	F · 4
IC004	F · 5
IC005	B · 3
IC006	E · 6
IC007	F · 7
IC200	H · 10
IC201	H · 12
IC202	G · 4
IC203	I · 7
IC301	C · 6
Q001	B · 2
Q002	B · 14
Q005	B · 13
Q006	G · 14
Q007	E · 10
Q008	G · 14
Q051	H · 15
Q052	H · 15
Q053	G · 2
Q054	E · 6
Q055	F · 2
Q070	F·3
Q071	F · 15
Q073	F · 15
Q074	F · 15
Q076	F · 14
Q078	F · 14
Q079	F · 15
Q080	F · 14
Q081	F · 2
Q201	H · 7
Q202	I · 7
Q203	I · 5
Q204	H · 7
Q205	H · 7
Q206	G · 10
Q302	C · 4
Q303	C · 13
Q304	C · 11
Q305	B·5
Q307	C · 11
Q317	C · 11
Q318	D · 11
Q319	D·15
Q320	C · 5
Q321	E·15
RV001	C · 14
RV002	D · 15
RV200	I · 9
RV301	A · 9
RV302	B · 9
RV306	A·12
TP001	C · 1
TP002	F · 1
TP003	G·8
TP004	D·8
TP006	E · 1
TP007	E · 4
TP303	C·23

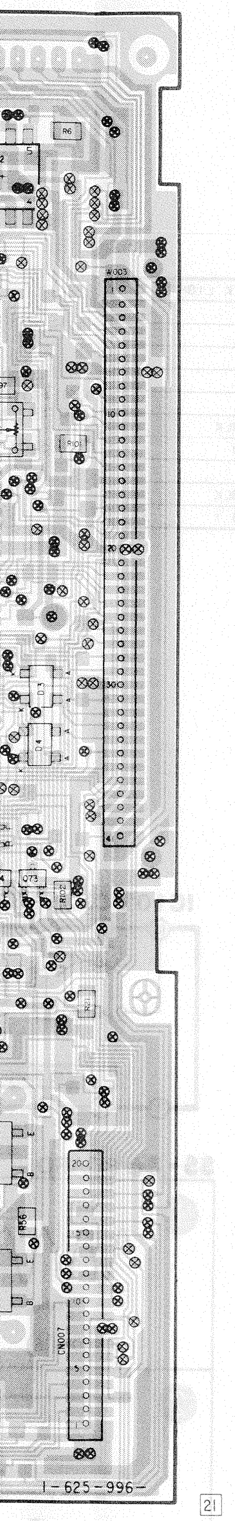
VA-41 BOARD
(COMPONENT SIDE)


J361
VIDEO OUT
RF DC OUT
AUDIO OUT
TP362
TP361
TP363
IC364
IC367
IC580
FL580
A
B
C
D
E
F
G
H
I
1-627-510-
12
1
2
3
4
5
6
7
8



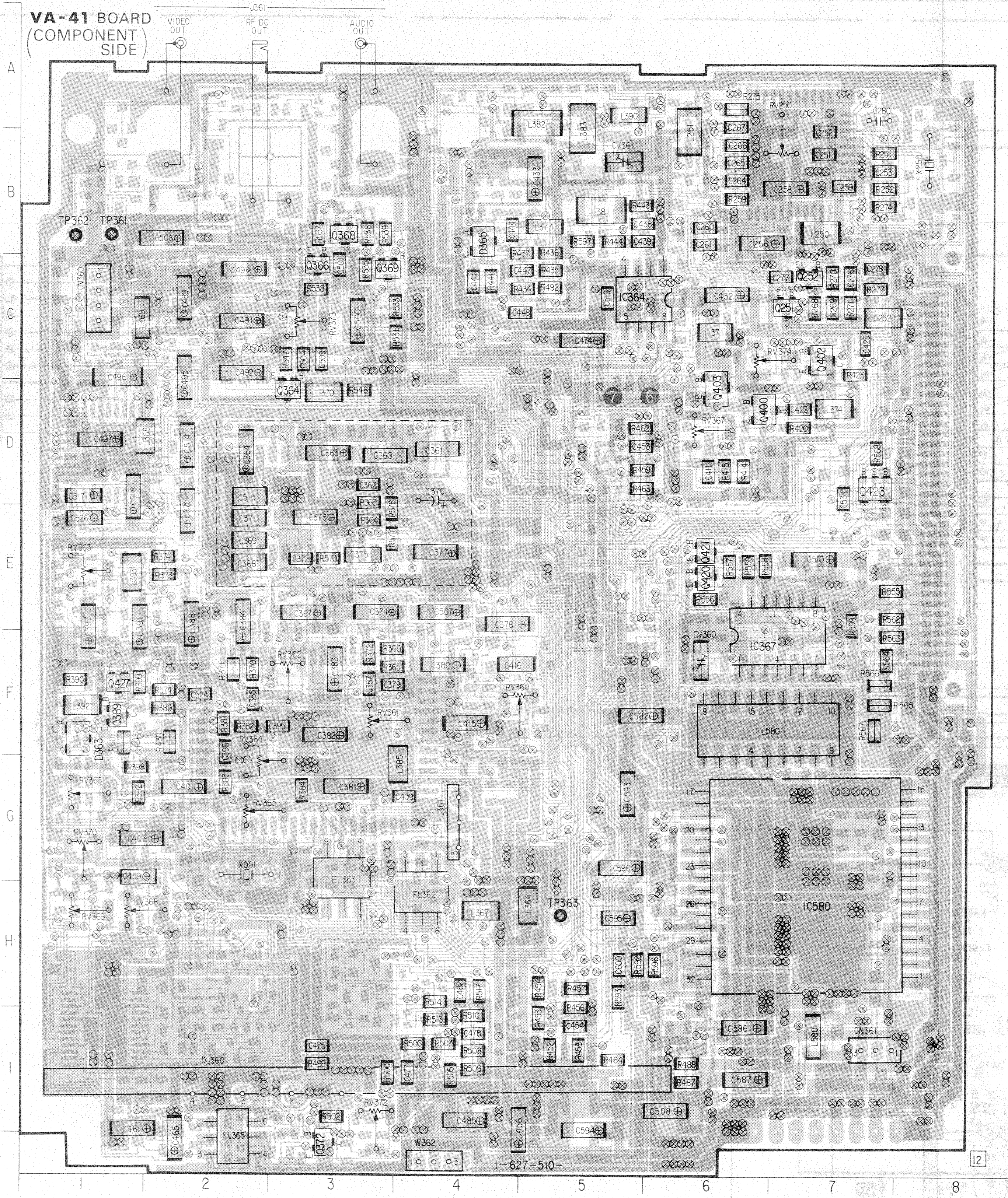
CN360	C · 1
CN361	I · 7
CV360	E · 6
CV361	B · 5
D361	E · 12
D362	H · 14
D363	F · 1
D364	H · 15
D365	B · 4
D366	B · 16
D367	A · 16
D368	B · 15
D369	B · 14
D370	B · 14
D372	E · 11
D400	A · 9
IC250	B · 10
IC360	F · 14
IC361	D · 14
IC362	D · 16
IC363	H · 16
IC364	B · 5
IC365	C · 11
IC366	H · 12
IC367	F · 7
IC368	E · 10
IC580	G · 7
Q250	B · 11
Q251	C · 7
Q252	C · 7
Q253	B · 10
Q254	B · 9
Q361	B · 1
Q362	A · 1
Q363	A · 1
Q364	D · 3
Q365	C · 1
Q366	C · 3
Q367	B · 1
Q368	C · 3
Q369	C · 3
Q370	I · 1
Q371	I · 1
Q372	I · 3

FOR TABLE OF WAVEFORMS, SEE PAGES 100 AND 101.

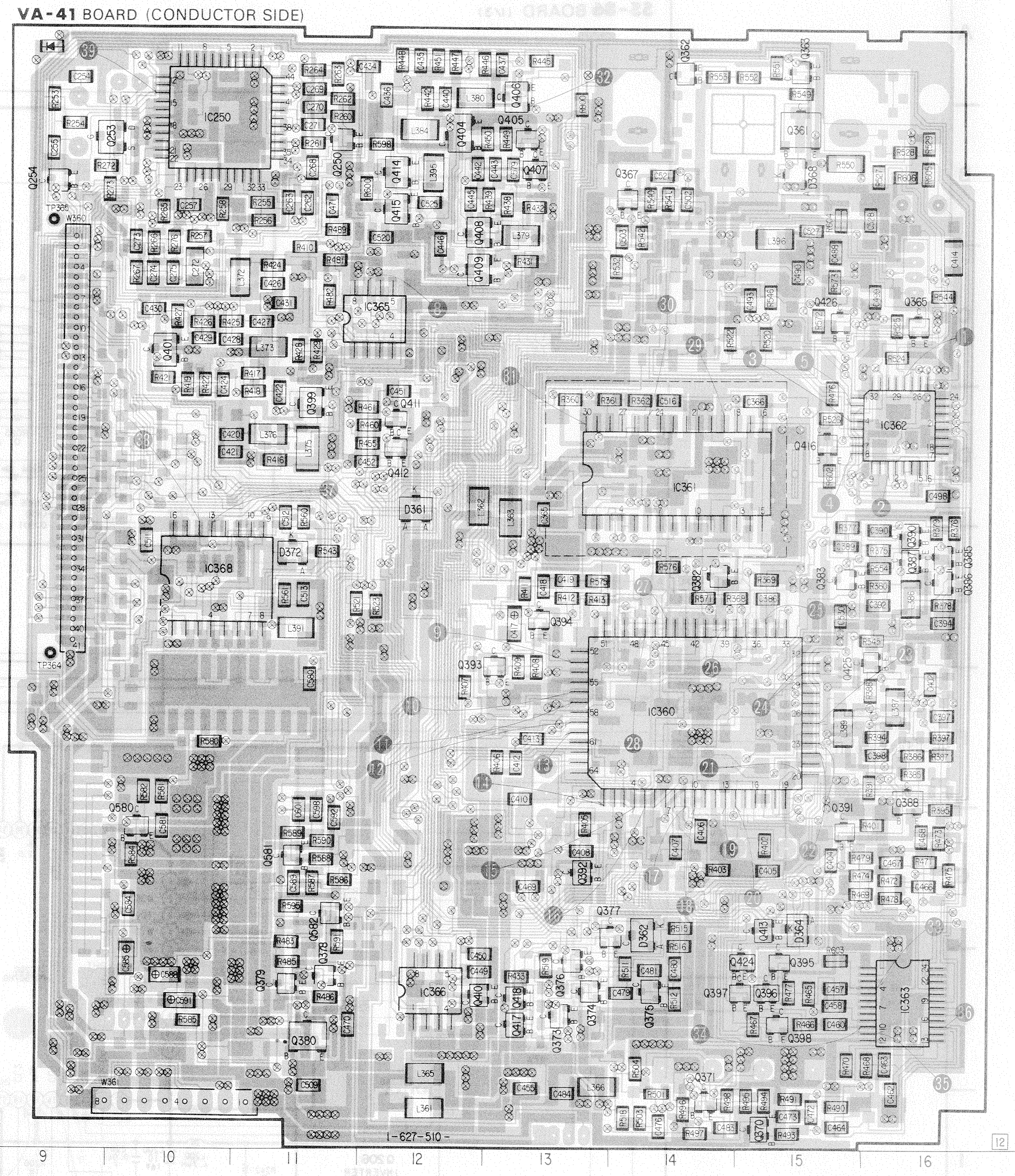


TP003	G-8
TP004	D-8
TP006	E-1
TP007	E-4
TP303	C-23

VA-41 BOARD (COMPONENT SIDE)


J361
VIDEO OUT
RF DC OUT
AUDIO OUT
TP362
TP361
TP363
IC364
IC367
FL580
IC580
FL363
FL362
DL360
W362
1-627-510-
12
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8

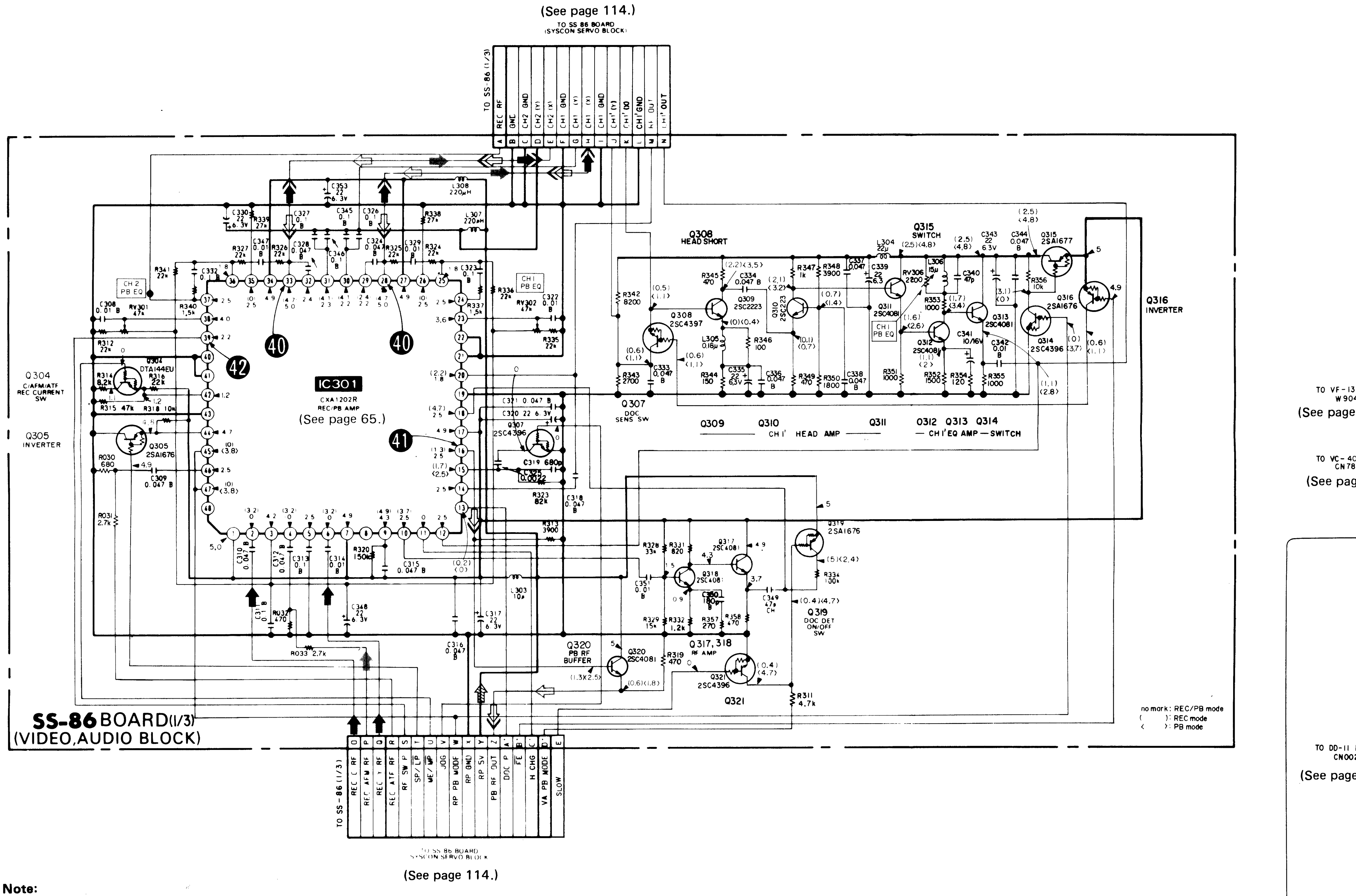
VA-41 BOARD (CONDUCTOR SIDE)


IC250
IC365
IC368
IC361
IC362
IC360
IC366
IC363
W360
W361
TP365
TP364
1-627-510-
12
9
10
11
12
13
14
15
16

CN360	C-1
CN361	I-7
CV360	E-6
CV361	B-5
D361	E-12
D362	H-14
D363	F-1
D364	H-15
D365	B-4
D366	B-16
D367	A-16
D368	B-15
D369	B-14
D370	B-14
D372	E-11
D400	A-9
IC250	B-10
IC360	F-14
IC361	D-14
IC362	D-16
IC363	H-16
IC364	B-5
IC365	C-11
IC366	H-12
IC367	F-7
IC368	E-10
IC580	G-7
Q250	B-11
Q251	C-7
Q252	C-7
Q253	B-10
Q254	B-9
Q361	B-15
Q362	A-14
Q363	A-15
Q364	D-3
Q365	C-16
Q366	C-3
Q367	B-14
Q368	C-3
Q369	C-3
Q370	I-15
Q371	I-14
Q372	I-3
Q373	H-13
Q374	H-13
Q375	H-14
Q376	H-13
Q377	H-13
Q378	I-11
Q379	I-11
Q380	I-11
Q382	E-14
Q383	E-15
Q385	E-16
Q386	F-16
Q387	E-16
Q388	G-16
Q389	F-1
Q390	E-16
Q391	G-15
Q392	H-13
Q393	F-13
Q394	F-13
Q395	H-15
Q396	I-15
Q397	I-15
Q398	I-15
Q399	D-11
Q400	D-6
Q401	D-10
Q402	C-7
Q403	C-6
Q404	B-12
Q405	B-13
Q406	B-13
Q407	B-13
Q408	C-12
Q409	C-12
Q410	I-12
Q411	D-12
Q412	D-12
Q413	H-15
Q414	B-12
Q415	B-12
Q416	D-15
Q417	I-13
Q418	I-13
Q420	E-6
Q421	E-6
Q423	D-7
Q424	H-15
Q425	F-15
Q426	C-15
Q427	F-1
Q580	G-10
Q581	G-11
Q582	H-11
RV250	A-7
RV360	F-5
RV361	F-3
RV362	E-3
RV363	E-1
RV364	G-2
RV365	G-2
RV366	G-1
RV367	D-6
RV368	H-2
RV369	H-1
RV370	G-1
RV372	I-3
RV374	D-7
TP361	B-1
TP362	B-1
TP363	H-5
TP364	F-9
TP365	C-9

SS-86 (REC/PB AMP), VA-41 (VIDEO/AUDIO SIGNAL PROCESS), MC-24 (MIC AMP, START/STOP SWITCH) SCHEMATIC DIAGRAM

– Ref. No. SS-86, MC-24 BOARDS: 2,000 series, VA-41 BOARD: 3,000 series –

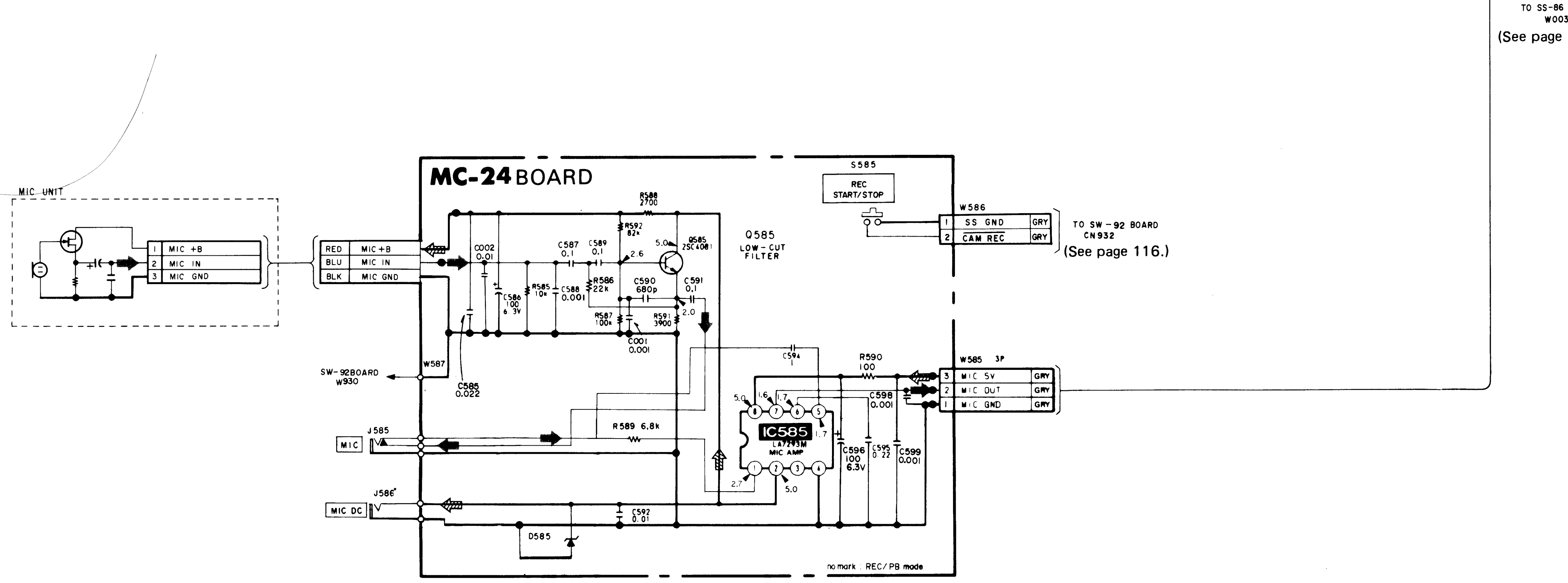


(See page 114.)
TO SS-86 BOARD (SYSCON SERVO BLOCK)
TO SS-86 (1/3)
REC RF
GND
CH2 GND
CH2 (X)
CH2 (Y)
CH1 GND
CH1 (Y)
CH1 (X)
CH1 GND
CH1' (Y)
CH1' GND
H1 OUT
H1' OUT
IC301
CXA1202R
REC/PB AMP
(See page 65.)
40
41
42
CH2 PB EQ
CH1 PB EQ
Q304 C/AFM/ATF REC CURRENT SW
Q305 INVERTER
Q307 DOC SENS SW
Q308 HEAD SHORT
Q309 Q310 Q311 CH1' HEAD AMP
Q312 Q313 Q314 — CH1' EQ AMP — SWITCH
Q315 SWITCH
Q316 INVERTER
Q317, 318 RF AMP
Q319 DOC DET ON/OFF SW
Q320 PB RF BUFFER
Q321
SS-86 BOARD(1/3)
(VIDEO, AUDIO BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
TO SS-86 (1/3)
REC C RF
REC AFM RF
REC Y RF
REC ATF RF
RF SW P
SP/LP
WE/GND
JOG
RP GND
RP SV
PB RF OUT
DOC
FE
H CHG
VA PB MODE
SLOW
TO SS-86 BOARD (SYSCON SERVO BLOCK)
(See page 114.)
TO VF-13 W904
(See page
TO VC-40 CN78
(See pag
TO DD-11 CN002
(See page

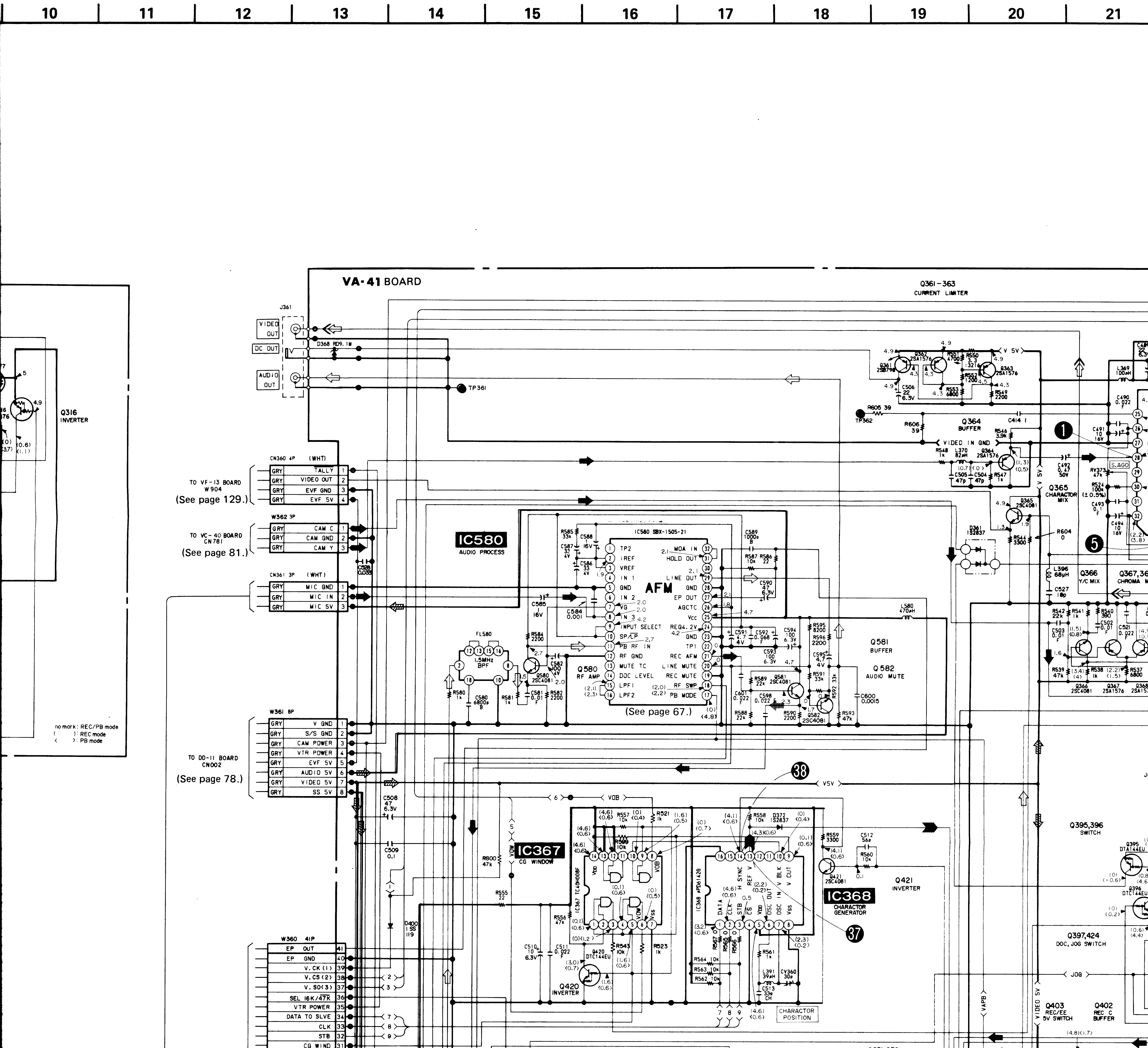
Note:

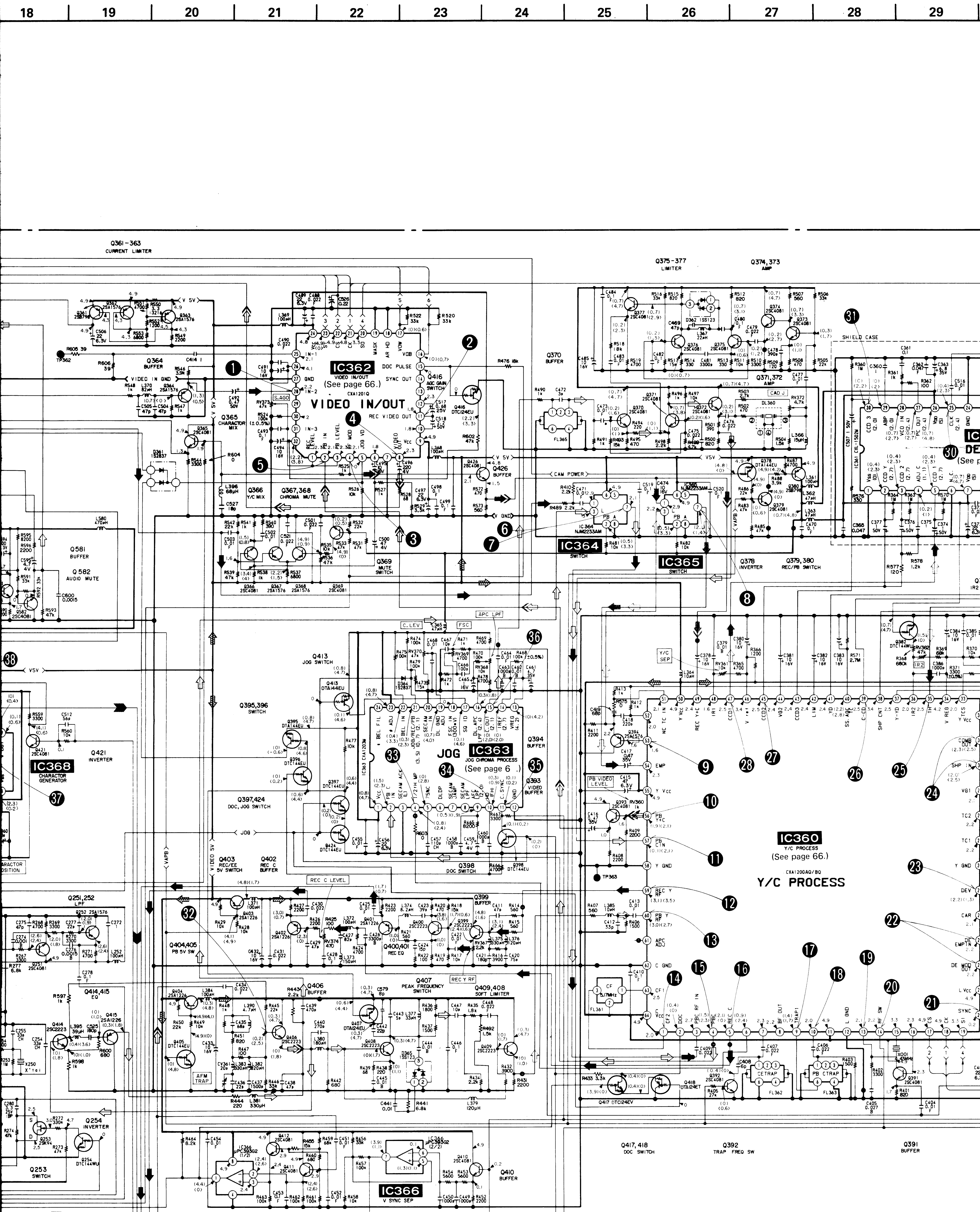
- Signal path
  - ➡ : REC Y Signal
  - ⇨ : PB Y Signal
  - ➡ : REC CHROMA Signal
  - ⇨ : PB CHROMA Signal
  - ➡ : REC Y/CHROMA Signal
  - ⇨ : PB Y/CHROMA Signal
  - ➡ : REC AUDIO Signal
  - ⇨ : PB AUDIO Signal

Ref. signal	➡



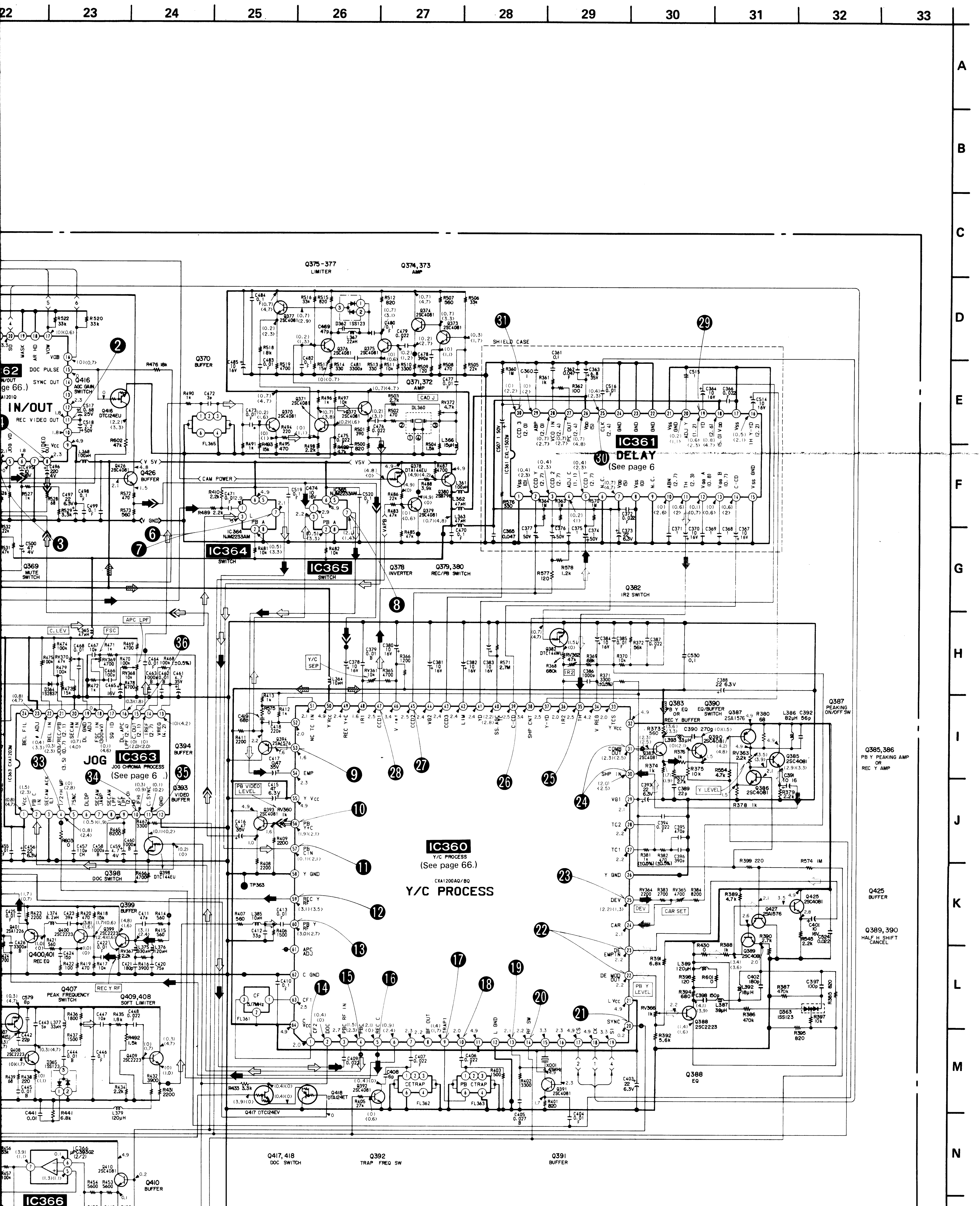
TO SS-86 W003
(See page
MIC UNIT
MIC +B
MIC IN
MIC GND
RED
BLU
BLK
MC-24 BOARD
S585 REC START/STOP
W586
SS GND
CAM REC
GRY
TO SW-92 BOARD CN932
(See page 116.)
Q585 LOW-CUT FILTER
IC585
LA7293M
MIC AMP
W585 3P
MIC 5V
MIC OUT
MIC GND
SW-92 BOARD W930
W587
J585
MIC
J586
MIC DC
D585
no mark : REC/PB mode


10
11
12
13
14
15
16
17
18
19
20
21
VA-41 BOARD
J361
VIDEO OUT
DC OUT
AUDIO OUT
TP361
Q316
INVERTER
CN360 4P (WHT)
TALLY
VIDEO OUT
EVF GND
EVF 5V
TO VF-13 BOARD W904
(See page 129.)
W362 3P
CAM C
CAM GND
CAM Y
TO VC-40 BOARD CN781
(See page 81.)
CN361 3P (WHT)
MIC GND
MIC IN
MIC 5V
IC580
AUDIO PROCESS
IC580 SBX-1505-21
AFM
(See page 67.)
FL580
1.5MHz BPF
Q580
RF AMP
Q581
BUFFER
Q 582
AUDIO MUTE
W361 8P
V GND
S/S GND
CAM POWER
VTR POWER
EVF 5V
AUDIO 5V
VIDEO 5V
SS 5V
TO DD-11 BOARD CN002
(See page 78.)
no mark: REC/PB mode
( ): REC mode
< >: PB mode
IC367
CG WINDOW
Q420
INVERTER
IC368
CHARACTOR GENERATOR
Q421
INVERTER
CHARACTOR POSITION
W360 41P
EP OUT
EP GND
V.CK(1)
V.CS(2)
V.SO(3)
SEL 16K/47K
VTR POWER
DATA TO SLVE
CLK
STB
CG WIND
CG 5V
A MUTE
ATF LOCK
TS.B
TALLY
ATF ERR
RP PB MODE
SLOW
CAM POWER
VA PB MODE
SS 5V
SP/LP
JOG
RF SWP
H CHG
RP 5V
V MUTE
SEL 2
SEL 1
REF V
JOG VD
CLOG
DOC
S/S GND
REC Y RF
REC AFM RF
REC C RF
REC ATF RF
RF GND
PB RF OUT
TO SS-86 BOARD W003
(See page 114.)
Q423
FMW1
ATF BIAS
IC250
ATF SERVO
CXA1204Q
ATF
(See page 65.)
Q250
BUFFER
Q251,252
LPF
Q414,415
EQ
Q253
SWITCH
Q254
INVERTER
Q361-363
CURRENT LIMITER
TP362
Q364
BUFFER
Q365
CHARACTOR MIX
Q366
Y/C MIX
Q367,36
CHROMA M
Q395,396
SWITCH
Q397,424
DOC, JOG SWITCH
Q403
REC/EE 5V SWITCH
Q402
REC C BUFFER
Q404,405
PB 5V SW
AFM TRAP
IC366
CLOG DETECT
Q411,412
CLOG DETECT
37
38
39
32
1
5


18
19
20
21
22
23
24
25
26
27
28
29
Q361-363
CURRENT LIMITER
Q364
BUFFER
Q365
CHARACTOR MIX
Q366
Y/C MIX
Q367,368
CHROMA MUTE
Q369
MUTE SWITCH
Q581
BUFFER
Q582
AUDIO MUTE
IC362
VIDEO IN/OUT
(See page 66.)
CXA1201Q
VIDEO IN/OUT
DOC PULSE
SYNC OUT
REC VIDEO OUT
Q416
AGC GAIN SWITCH
Q426
BUFFER
Q370
BUFFER
Q375-377
LIMITER
Q374,373
AMP
Q371,372
AMP
CAD J
DL360
FL365
CAM POWER
IC364
NJM2233AM
SWITCH
IC365
SWITCH
Q378
INVERTER
Q379,380
REC/PB SWITCH
SHIELD CASE
IC361 CXL-1502M
C.LEV
FSC
APC LPF
Q413
JOG SWITCH
Q395,396
SWITCH
Q397,424
DOC, JOG SWITCH
JOG
IC363
JOG CHROMA PROCESS
(See page 6 .)
Q394
BUFFER
Q393
VIDEO BUFFER
Q398
DOC SWITCH
Q421
INVERTER
IC368
CHARACTOR GENERATOR
CHARACTOR POSITION
Q403
REC/EE 5V SWITCH
Q402
REC C BUFFER
REC C LEVEL
Q399
BUFFER
Q400,401
REC EQ
REC Y RF
Q251,252
LPF
Q404,405
PB 5V SW
Q414,415
EQ
Q406
BUFFER
Q407
PEAK FREQUENCY SWITCH
Q409,408
SOFT LIMITER
AFM TRAP
Q253
SWITCH
Q254
INVERTER
IC366
V SYNC SEP
IC366
CLOG DETECT
Q411,412
CLOG DETECT
Q410
BUFFER
Y/C SEP
PB VIDEO LEVEL
IC360
Y/C PROCESS
(See page 66.)
CXA1200AQ/BQ
Y/C PROCESS
TP362
TP363
FL361
FL362
FL363
CETRAP
PB CTRAP
Q417,418
DOC SWITCH
Q392
TRAP FREQ SW
Q391
BUFFER
V5V
VIDEO IN GND
VIDEO 5V
VAPB
JOG

FOR IC BLOCK DIAGRAMS, SEE PAGES
FOR TABLE OF WAVEFORMS, SEE PA

VIDEO/AUDIO VIDEO/AUDIO


22
23
24
25
26
27
28
29
30
31
32
33
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q375-377
LIMITER
Q374,373
AMP
Q371,372
AMP
Q370
BUFFER
SHIELD CASE
IC361
DELAY
(See page 6
IC364
NJM2233AM
SWITCH
IC365
SWITCH
Q378
INVERTER
Q379,380
REC/PB SWITCH
Q382
IR2 SWITCH
CAM POWER
V 5V
V GND
IN/OUT
REC VIDEO OUT
DOC PULSE
SYNC OUT
Q416
AGC GAIN SWITCH
Q369
MUTE SWITCH
IC363
JOG
JOG CHROMA PROCESS
(See page 6 .)
Q394
BUFFER
Q393
VIDEO BUFFER
Q398
DOC SWITCH
IC360
Y/C PROCESS
(See page 66.)
CXA1200AQ/BQ
Y/C PROCESS
Q387
PEAKING ON/OFF SW
Q385,386
PB Y PEAKING AMP OR REC Y AMP
Q425
BUFFER
Q389,390
HALF H SHIFT CANCEL
Q388
EQ
Q391
BUFFER
Q392
TRAP FREQ SW
Q417,418
DOC SWITCH
Q400,401
REC EQ
Q399
BUFFER
Q407
PEAK FREQUENCY SWITCH
Q409,408
SOFT LIMITER
Q410
BUFFER
IC366
V SYNC SEP
C.LEV
FSC
APC LPF
Y/C SEP
PB VIDEO LEVEL
Y LEVEL
PB Y LEVEL
DEV
CAR SET
REC Y RF
CETRAP
PB CTRAP
FL361
FL362
FL363
FL365
TP363

FOR IC BLOCK DIAGRAMS, SEE PAGES 65 TO 67.
FOR TABLE OF WAVEFORMS, SEE PAGES 100 AND 101.

SS-86 (SYSTEM CONTROL, SERVO), SW-92 (START/STOP, STANDBY SWITCH, INPUT/OUTPUT JACK), ZM-8 (ZOOM SWITCH), PA-13 (POWER), CC-7 (MODE SWITCH), FP-53

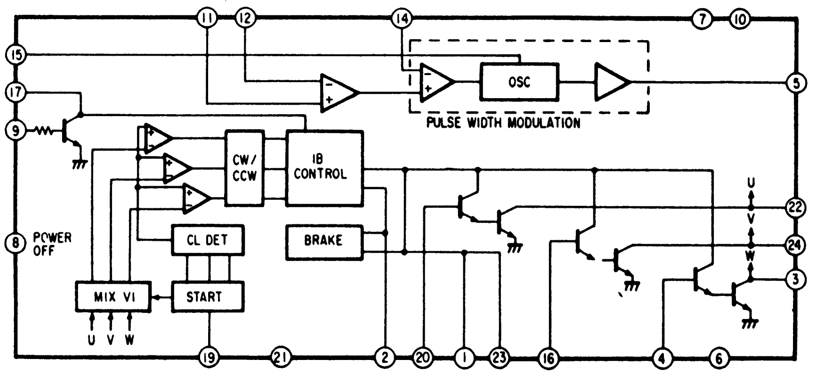
– Ref. No. SS-86 BOARD: 2,000 series, SW-92, ZM-8, PA-13, CC-7, FP-53 BOARDS: 4,000 series –

Note:

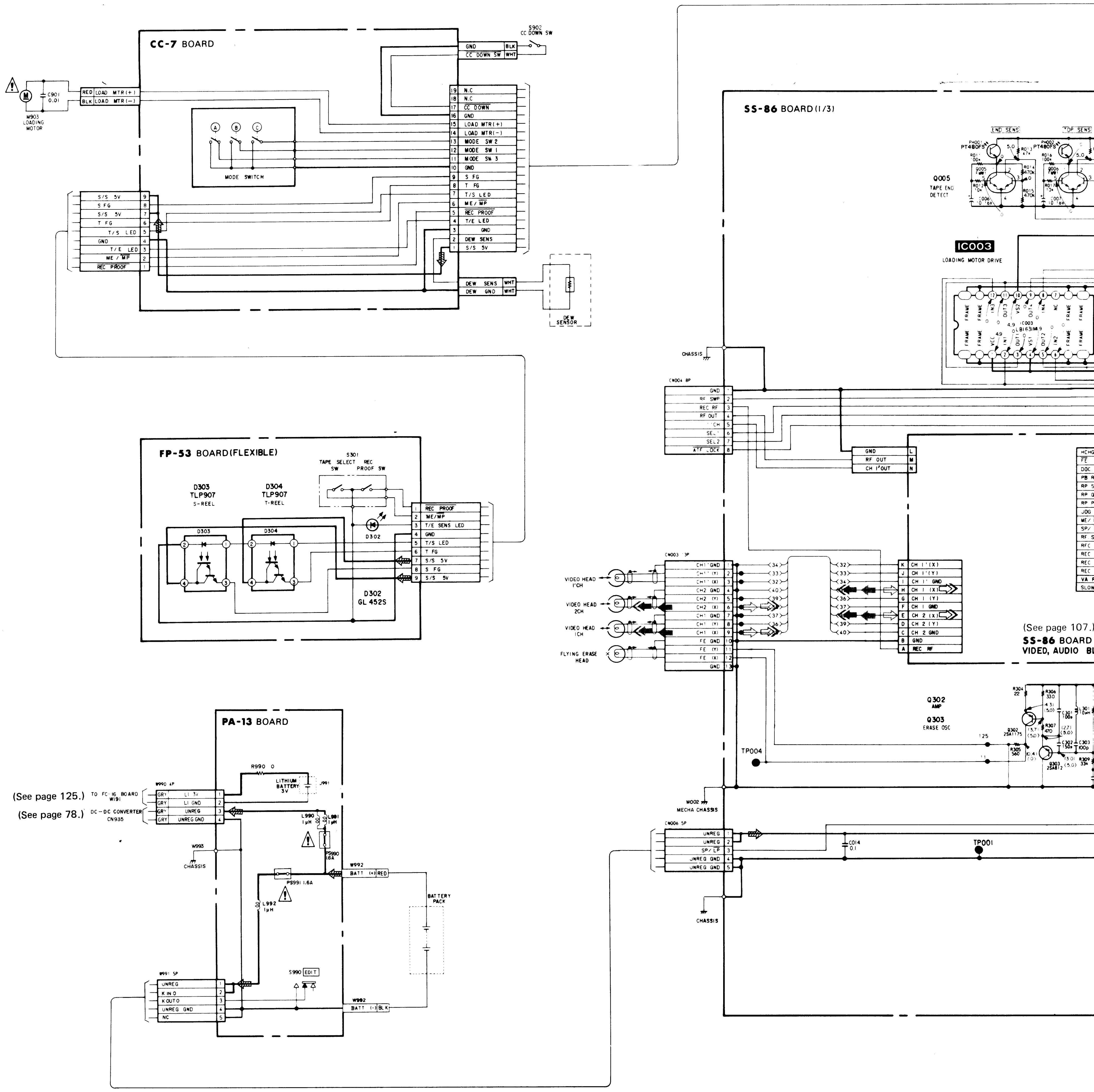
- Signal path
  - ➡ : REC Y Signal
  - ➡ : REC CHROMA Signal
  - ➡ : REC Y CHROMA Signal
  - ⇨ : PB Y/CHROMA Signal
  - ➡ : REC AUDIO Signal
  - ⇨ : PB AUDIO Signal

	REC	REC/PB	PB
Drum speed servo		➡	
Drum phase servo		➡	
Drum servo (speed and phase)		➡➡	
Capstan speed servo		➡	
Capstan phase servo	➡		⇨
Capstan servo (speed and phase)		➡➡	
Ref. signal	➡	➡	⇨

IC004 CX20114

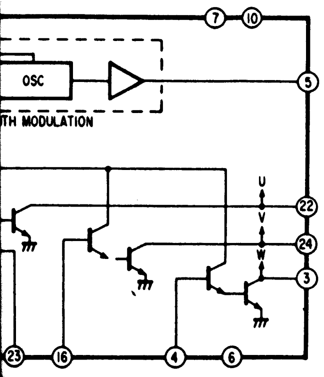


PULSE WIDTH MODULATION
OSC
CW/CCW
IB CONTROL
CL DET
BRAKE
MIX VI
START
POWER OFF
U V W



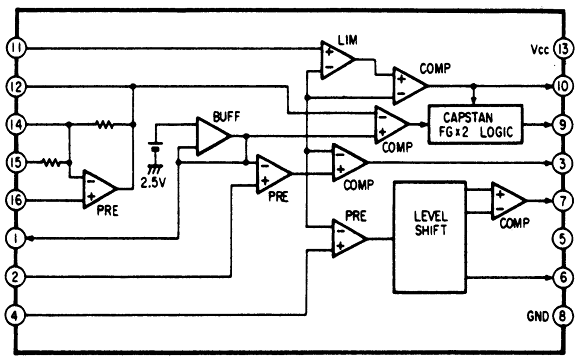
CC-7 BOARD
S902 CC DOWN SW
M903 LOADING MOTOR
C901 0.01
LOAD MTR(+)
LOAD MTR(−)
MODE SWITCH
GND
CC DOWN SW
N.C
CC DOWN
MODE SW 2
MODE SW 1
MODE SW 3
S FG
T FG
T/S LED
ME/MP
REC PROOF
T/E LED
DEW SENS
S/S 5V
DEW GND
DEW SENSOR
FP-53 BOARD(FLEXIBLE)
S301 TAPE SELECT SW REC PROOF SW
D303 TLP907 S-REEL
D304 TLP907 T-REEL
D302 GL452S
T/E SENS LED
PA-13 BOARD
(See page 125.) TO FC-16 BOARD W191
(See page 78.) DC-DC CONVERTER CN935
R990 0
LITHIUM BATTERY 3V
L990 1µH
L991 1µH
PS990 1.6A
PS991 1.6A
L992 1µH
W992 BATT (+) RED
BATT (−) BLK
BATTERY PACK
S990 EDIT
UNREG
UNREG GND
LI 3V
LI GND
K IN 0
K OUT 0
NC
CHASSIS
SS-86 BOARD (1/3)
END SENS
TOP SENS
Q005 TAPE END DETECT
IC003 LOADING MOTOR DRIVE
IC003 LB1631M
CN004 8P
RF SWP
REC RF
RF OUT
SEL 1
SEL 2
ATF LOCK
CN003 13P
VIDEO HEAD 1'CH
VIDEO HEAD 2CH
VIDEO HEAD 1CH
FLYING ERASE HEAD
CH 1' GND
CH 2 GND
CH 1 GND
FE GND
(See page 107.)
SS-86 BOARD
VIDEO, AUDIO
Q302 AMP
Q303 ERASE OSC
TP004
TP001
W002 MECHA CHASSIS
CN006 5P
SP/LP
C014

), CC-7 (MODE SWITCH), FP-53 (TAPE SELECT/CASSETTE IN SWITCH) SCHEMATIC DIAGRAM



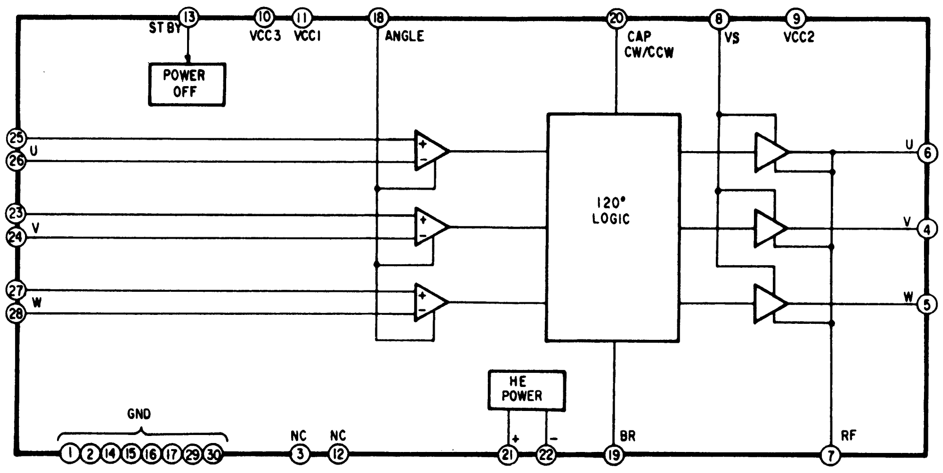
OSC
TH MODULATION
U
V
W

IC006 CX20115A



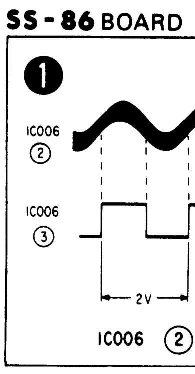
LIM
COMP
BUFF
2.5V
PRE
CAPSTAN FG×2 LOGIC
LEVEL SHIFT
Vcc
GND

IC007 CXA1127M

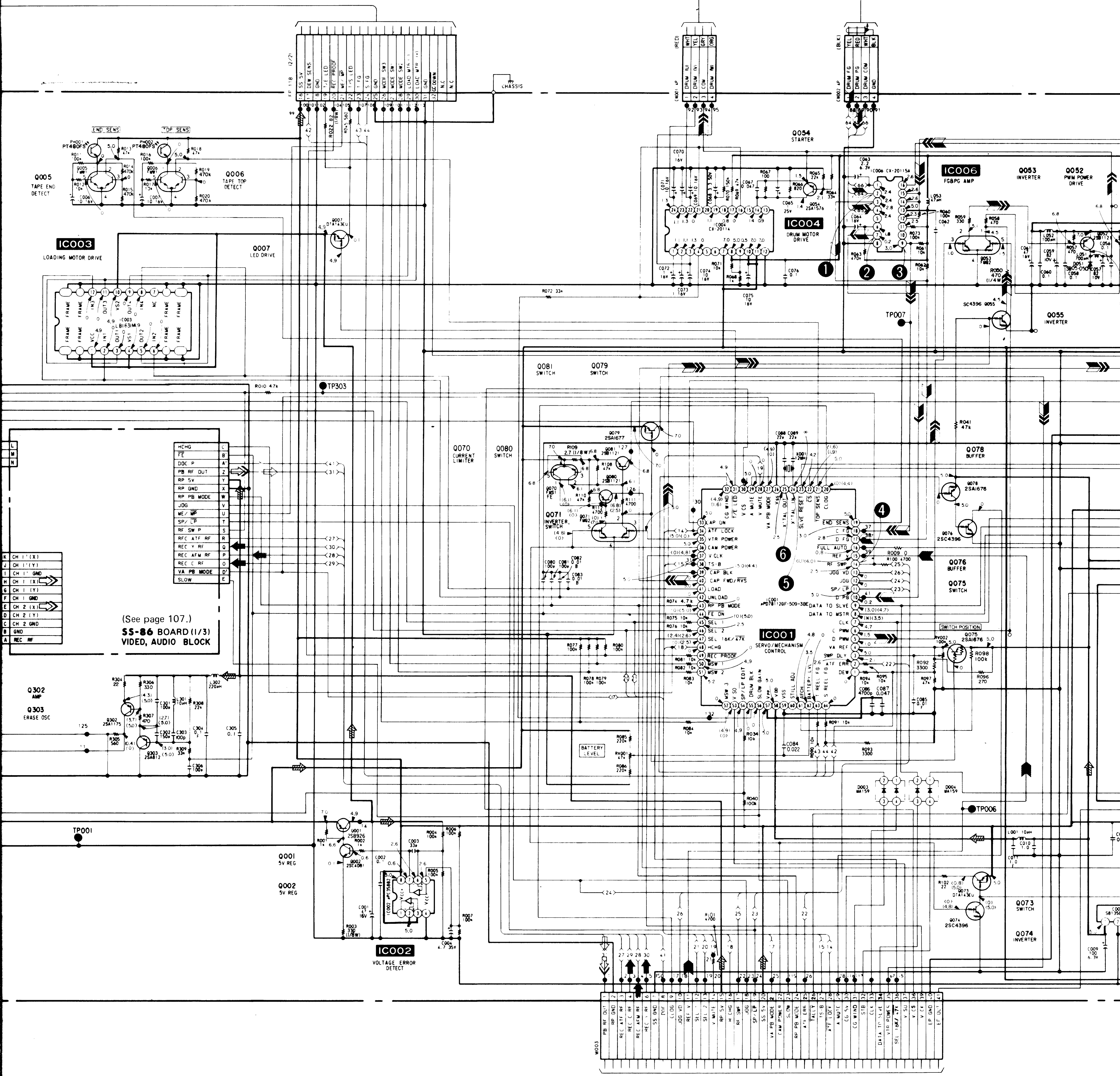


ST BY
POWER OFF
VCC3
VCC1
ANGLE
CAP CW/CCW
VS
VCC2
U
V
W
120° LOGIC
HE POWER
GND
NC
BR
RF

SS-86 BOARD

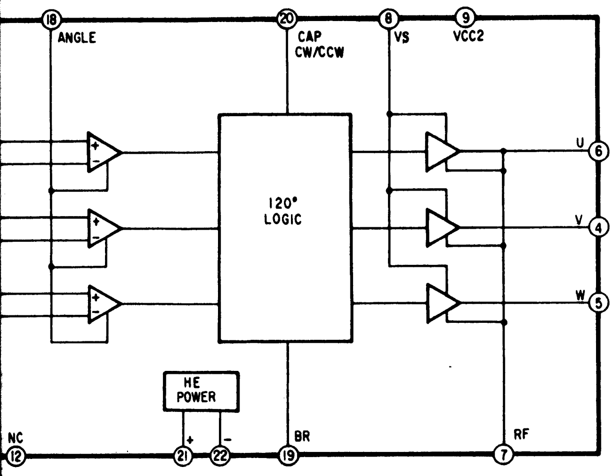


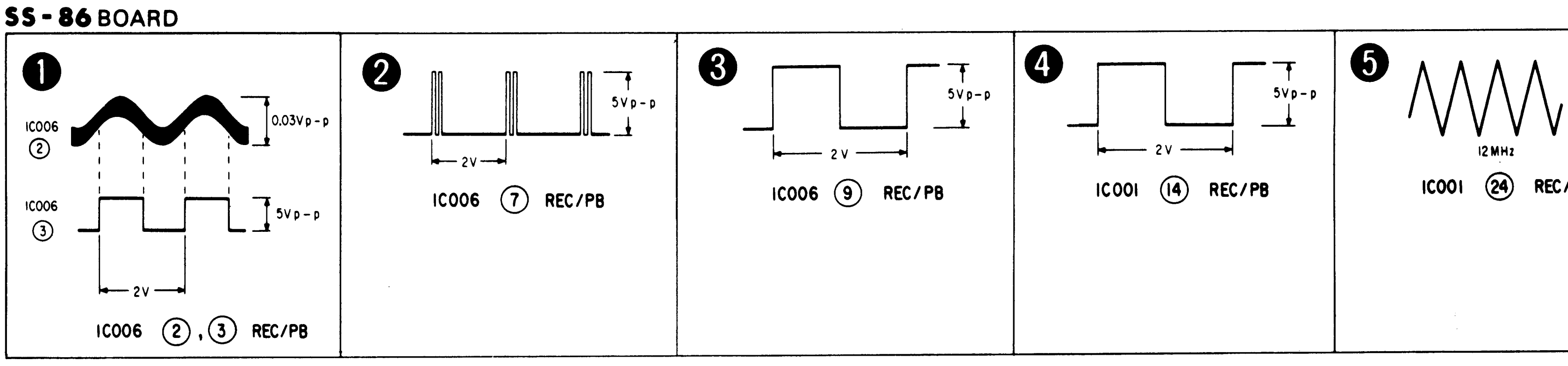
❶
IC006 ②
IC006 ③
2V
IC006 ②

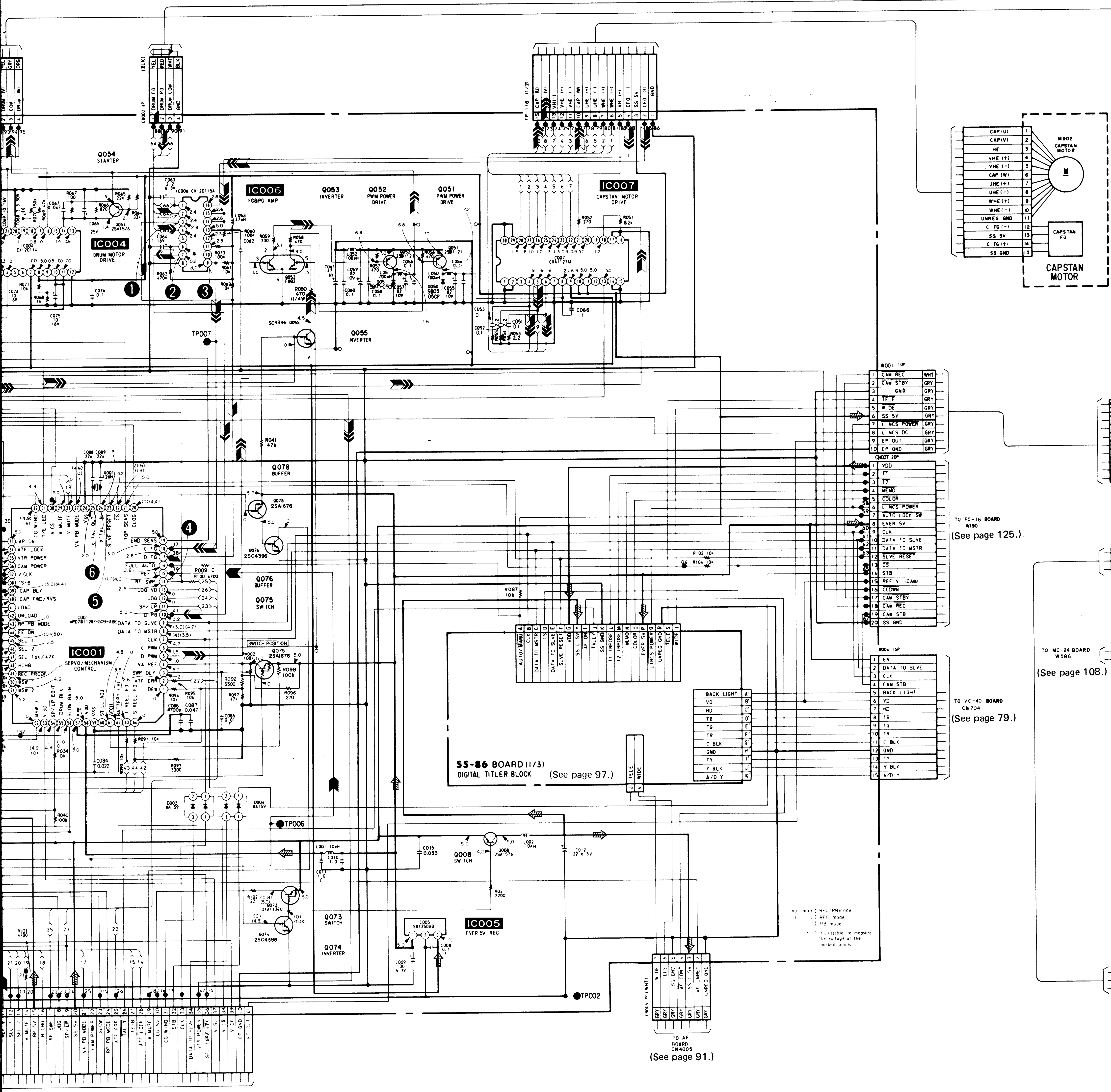


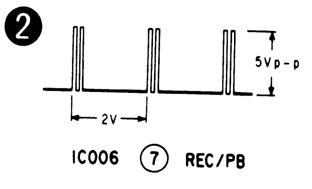
IC003
LOADING MOTOR DRIVE
IC001
SERVO/MECHANISM CONTROL
IC002
VOLTAGE ERROR DETECT
IC004
DRUM MOTOR DRIVE
IC006
FGBPG AMP
Q005 TAPE END DETECT
Q006 TAPE TOP DETECT
Q007 LED DRIVE
Q054 STARTER
Q053 INVERTER
Q052 PWM POWER DRIVE
Q055 INVERTER
Q081 SWITCH
Q079 SWITCH
Q070 CURRENT LIMITER
Q080 SWITCH
Q071 INVERTER, SWITCH
Q078 BUFFER
Q076 BUFFER
Q075 SWITCH
Q302 AMP
Q303 ERASE OSC
Q001 5V REG
Q002 5V REG
Q073 SWITCH
Q074 INVERTER
TP001
TP007
TP303
TP006
CHASSIS
END SENS
TOP SENS
BATTERY LEVEL
(See page 107.)
SS-86 BOARD (1/3) VIDEO, AUDIO BLOCK
TO VA-41 BOARD W360 (See page 110.)

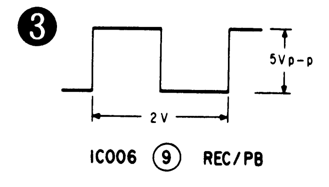
SERVO/SYSTEM CONTROL

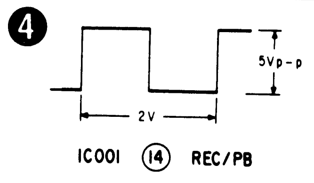

ANGLE
CAP CW/CCW
VS
VCC2
120° LOGIC
HE POWER
NC
BR
RF
U
V
W

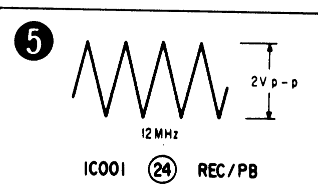

SS-86 BOARD
❶
IC006 ②
0.03Vp-p
IC006 ③
5Vp-p
2V
IC006 ②, ③ REC/PB
❷
5Vp-p
2V
IC006 ⑦ REC/PB
❸
5Vp-p
2V
IC006 ⑨ REC/PB
❹
5Vp-p
2V
IC001 ⑭ REC/PB
❺
12MHz
IC001 ㉔ REC/

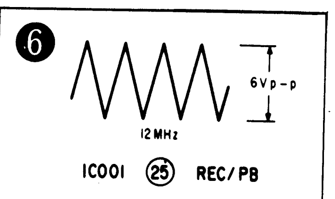

Q054 STARTER
IC004 DRUM MOTOR DRIVE
IC006 FGBPG AMP
Q053 INVERTER
Q052 PWM POWER DRIVE
Q051 PWM POWER DRIVE
IC007 CAPSTAN MOTOR DRIVE
Q055 INVERTER
TP007
M902 CAPSTAN MOTOR
CAPSTAN FG
CAPSTAN MOTOR
Q078 BUFFER
Q076 BUFFER
Q075 SWITCH
IC001 SERVO/MECHANISM CONTROL
TO FC-16 BOARD W190
(See page 125.)
TO MC-24 BOARD W586
(See page 108.)
TO VC-40 BOARD CN704
(See page 79.)
SS-86 BOARD (1/3)
DIGITAL TITLER BLOCK
(See page 97.)
TP006
Q008 SWITCH
Q073 SWITCH
Q074 INVERTER
IC005 EVER 5V REG
TP002
TO AF BOARD CN4005
(See page 91.)
TO VA-41 BOARD W360 (See page 110.)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
* : Impossible to measure the voltage at the marked points.

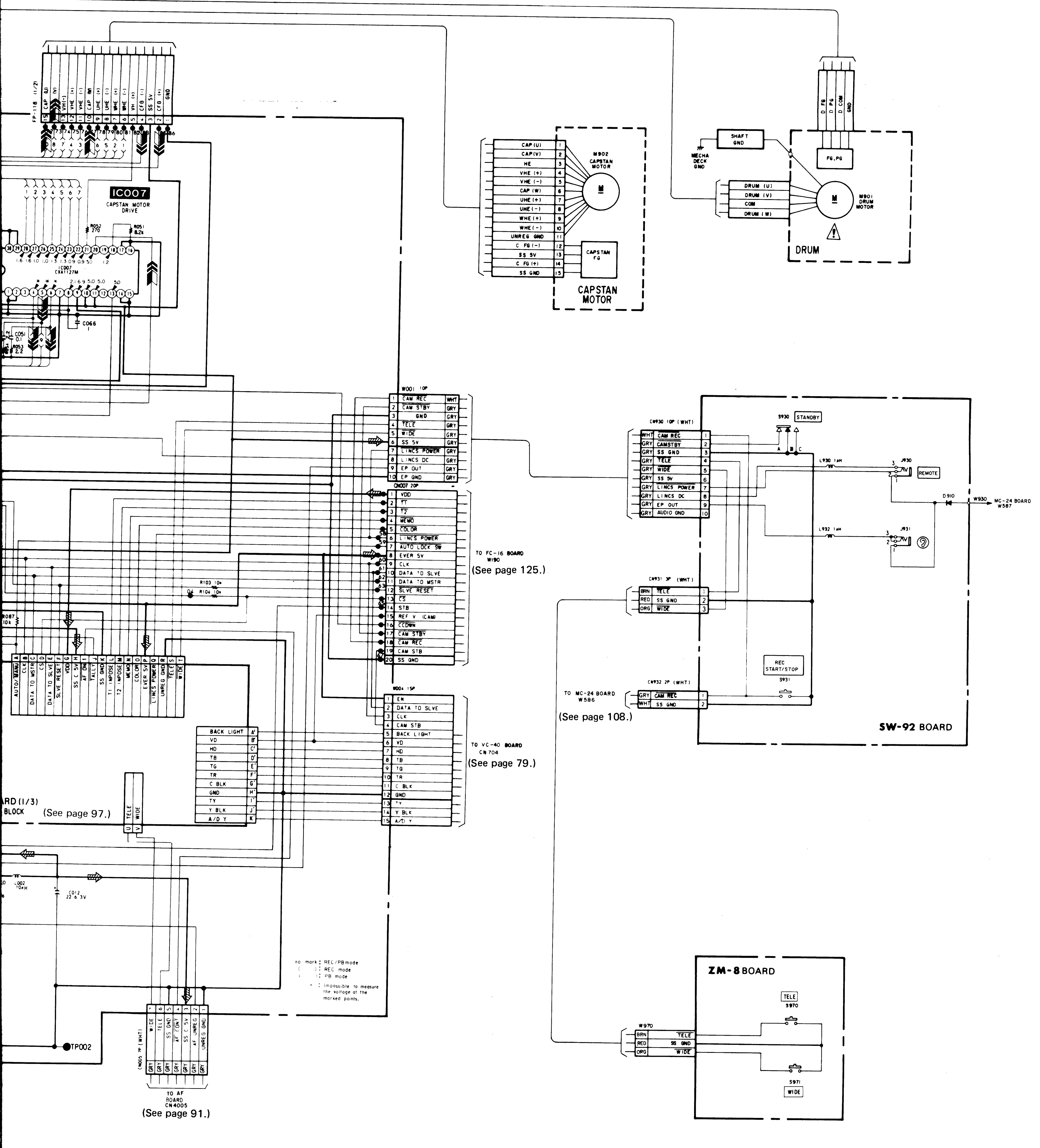











FP-118 (1/2)
CAP (U)
CAP (V)
VHE (-)
VHE (+)
CAP (W)
UHE (+)
UHE (-)
WHE (+)
WHE (-)
C FG (-)
SS 5V
C FG (+)
GND
IC007
CAPSTAN MOTOR DRIVE
IC007 CXA1127M
R052 270
R051 8.2k
C051
R053 2.2
C066
M902 CAPSTAN MOTOR
CAPSTAN FG
CAPSTAN MOTOR
SHAFT GND
MECHA DECK GND
D FG
D PG
D COM
GND
FG,PG
DRUM (U)
DRUM (V)
COM
DRUM (W)
M901 DRUM MOTOR
DRUM
W001 10P
CAM REC
CAM STBY
GND
TELE
WIDE
SS 5V
LINCS POWER
LINCS DC
EP OUT
EP GND
WHT
GRY
CN007 20P
VDD
T1
T2
MEMO
COLOR
LINCS POWER
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF Y (CAM)
CCDWN
CAM STBY
CAM REC
CAM STB
SS GND
TO FC-16 BOARD W190
(See page 125.)
R103 10k
R104 10k
R087 10k
AUTO/MANU
CLK
DATA TO MSTR
CS
DATA TO SLVE
SLVE RESET
VDD
SS C 5V
AF ON
TALLY
SS GND
T1 IMPOSE
T2 IMPOSE
MEMO
COLOR
EVER 5V
LINCS POWER
UNREG GND
TELE
WIDE
W004 15P
EN
DATA TO SLVE
CLK
CAM STB
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
*Y
Y BLK
A/D Y
TO VC-40 BOARD CN704
(See page 79.)
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
RD (1/3)
BLOCK
(See page 97.)
TELE
WIDE
L002 10μH
C012 22 6.3V
TP002
CN005 7P (WHT)
WIDE
TELE
SS GND
AF CONT
SS C 5V
UNREG
UNREG GND
GRY
TO AF BOARD CN4005
(See page 91.)
no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
* : impossible to measure the voltage at the marked points.
CN930 10P (WHT)
CAM REC
CAMSTBY
SS GND
TELE
WIDE
SS 5V
LINCS POWER
LINCS DC
EP OUT
AUDIO GND
S930
STANDBY
L930 1mH
J930
REMOTE
D910
W930
MC-24 BOARD W587
L932 1mH
J931
CN931 3P (WHT)
BRN
RED
ORG
TELE
SS GND
WIDE
REC START/STOP
S931
CN932 2P (WHT)
CAM REC
SS GND
TO MC-24 BOARD W586
(See page 108.)
SW-92 BOARD
ZM-8 BOARD
TELE
S970
W970
S971
WIDE

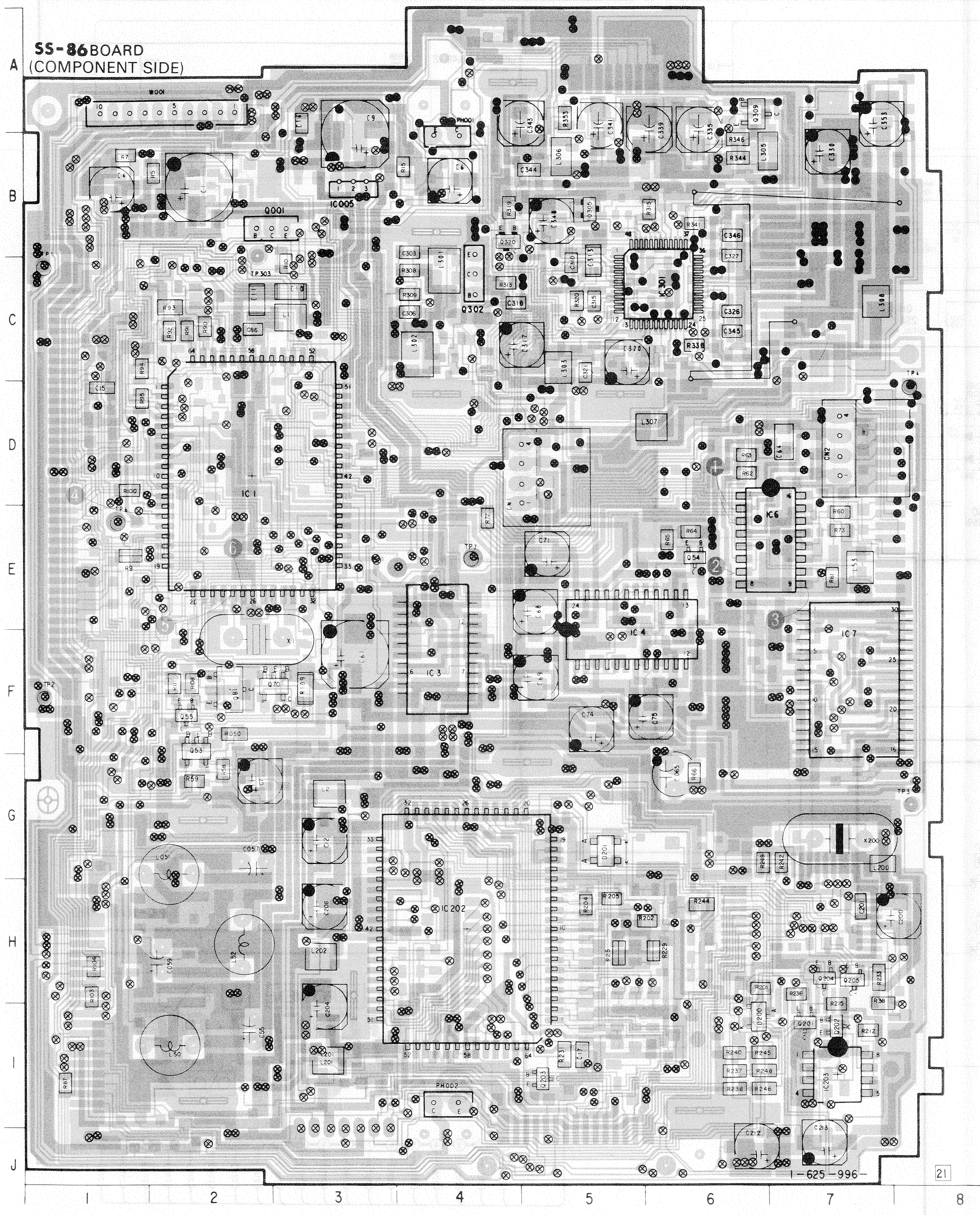
O/SYSTEM CONTROL

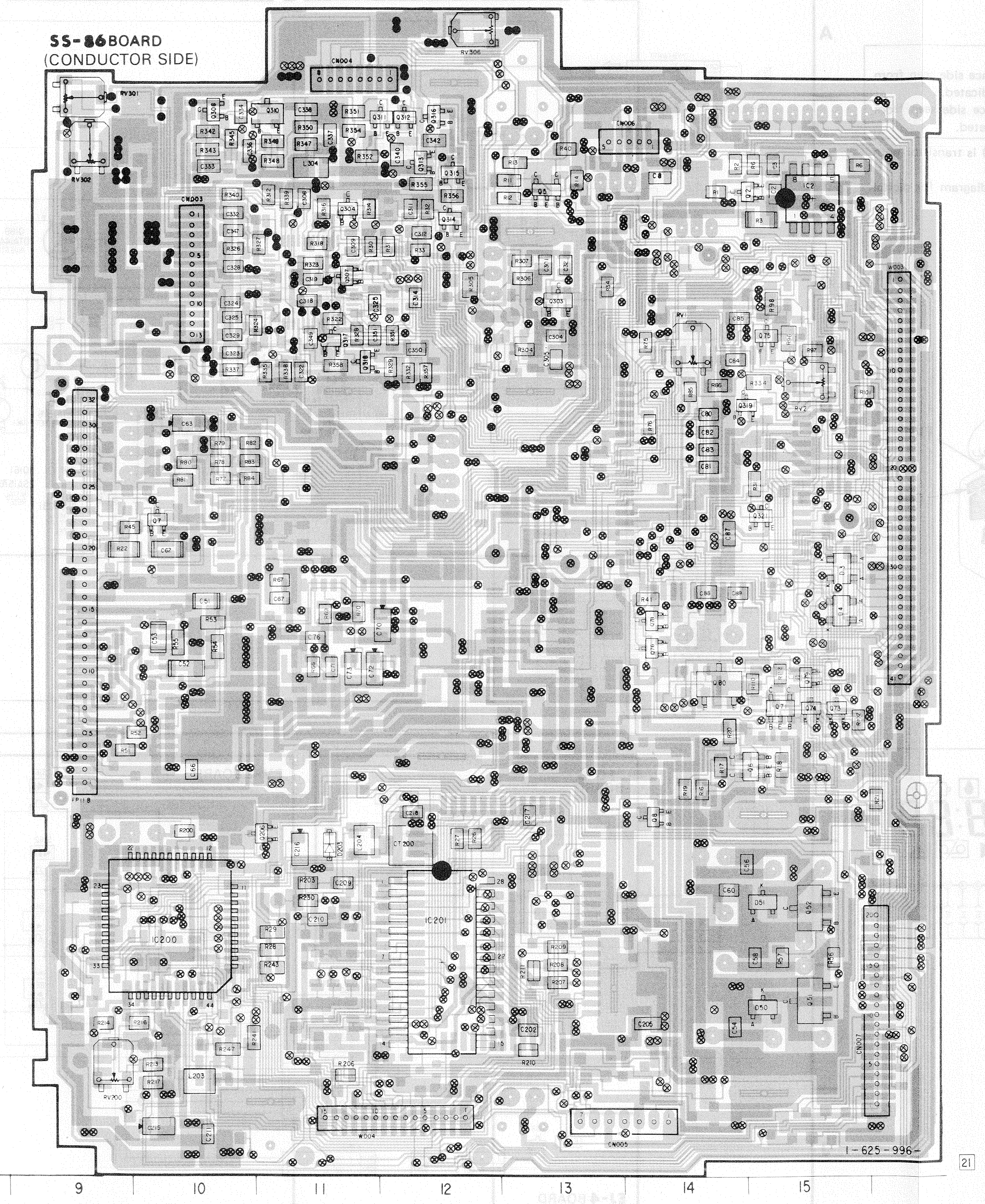
SERVO/SYSTEM CONTROL

SERVO/SYSTEM CONTROL SERVO/SYSTEM CONTROL

SS-86 (SYSTEM CONTROL, SERVO), SW-92 (START/STOP, STANDBY SWITCH, INPUT/OUTPUT JACK), ZM-8 (ZOOM SWITCH), PA-13 (POWER), CC-7 (MODE SWITCH), FP-53 (TAPE SELECT/CASSETTE IN SWITCH) PRINTED WIRING BOARDS

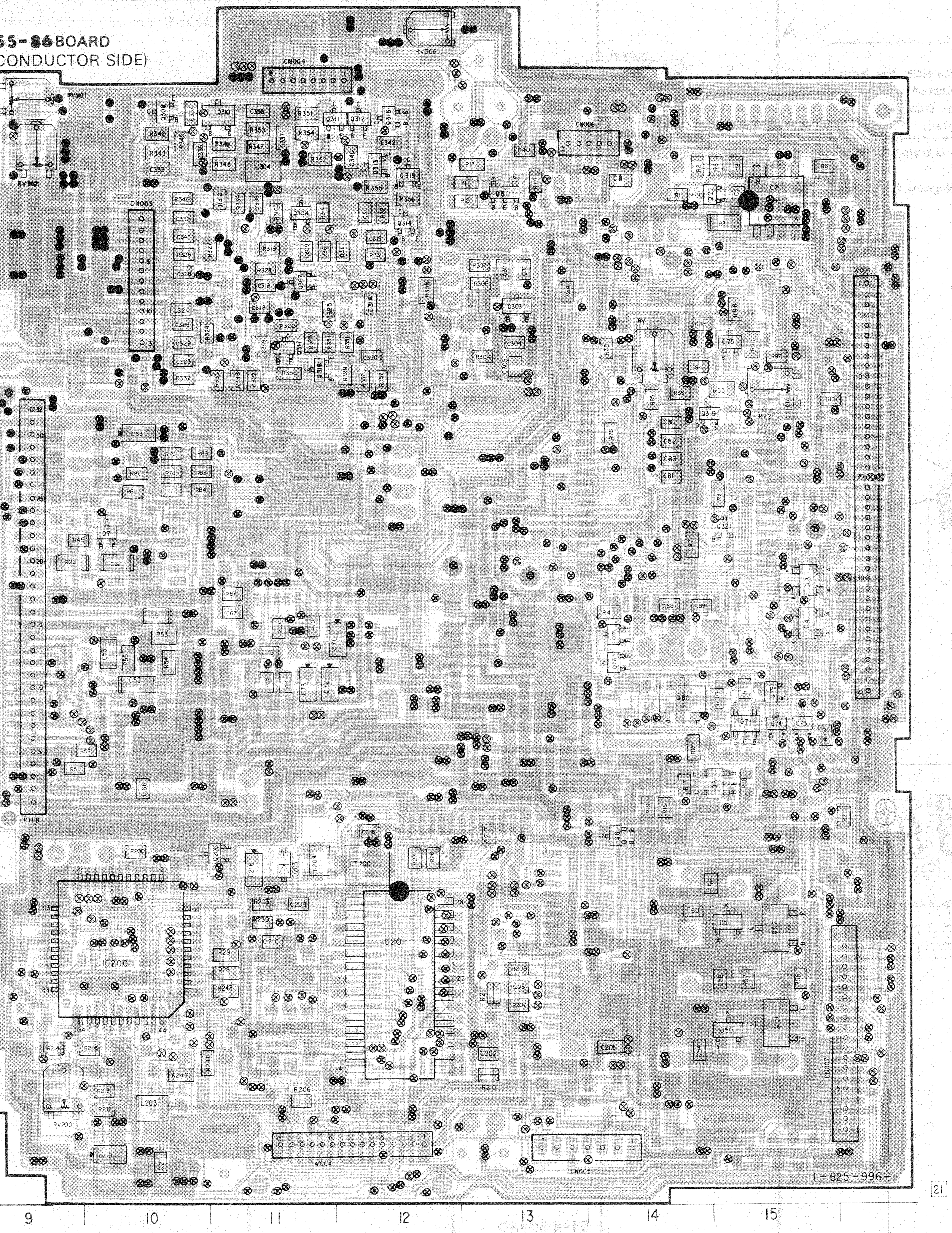
– Ref. No. SS-86 BOARD: 2,000 series, SW-92, ZM-8, PA-13, CC-7, FP-53 BOARDS: 4,000 series –

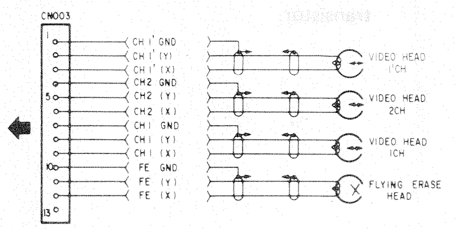

SS-86 BOARD
(COMPONENT SIDE)
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
IC1
IC3
IC4
IC6
IC7
IC202
IC301
IC203
Q001
IC005
1-625-996-
21

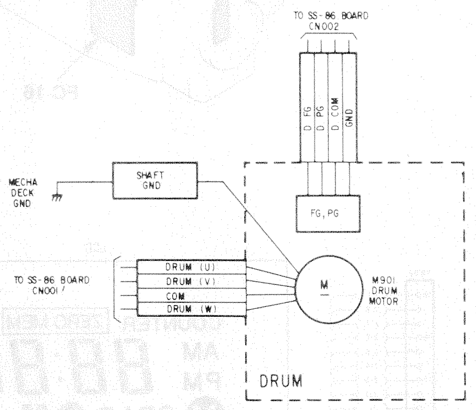

SS-86 BOARD
(CONDUCTOR SIDE)
9
10
11
12
13
14
15
IC2
IC200
IC201
CN003
CN004
CN005
CN006
CN007
1-625-996-
21

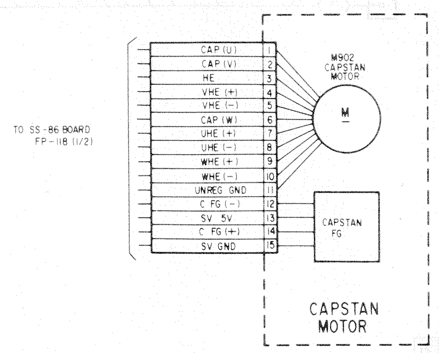
-13 (POWER), CC-7 (MODE SWITCH), FP-53 (TAPE SELECT/CASSETTE IN SWITCH) PRINTED WIRING BOARDS

S-86 BOARD
(CONDUCTOR SIDE)

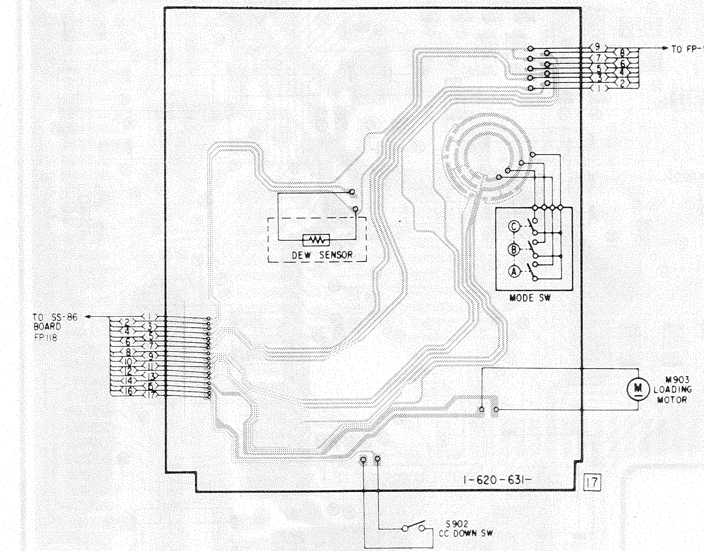

CN004
CN006
CN003
CN005
IC2
IC200
IC201
RV301
RV302
RV306
RV200
FP118
CN007
W004
1-625-996-
21
9
10
11
12
13
14
15


CN003
1
5
10
13
CH 1' GND
CH 1' (Y)
CH 1' (X)
CH2 GND
CH2 (Y)
CH2 (X)
CH1 GND
CH1 (Y)
CH1 (X)
FE GND
FE (Y)
FE (X)
VIDEO HEAD 1'CH
VIDEO HEAD 2CH
VIDEO HEAD 1CH
FLYING ERASE HEAD

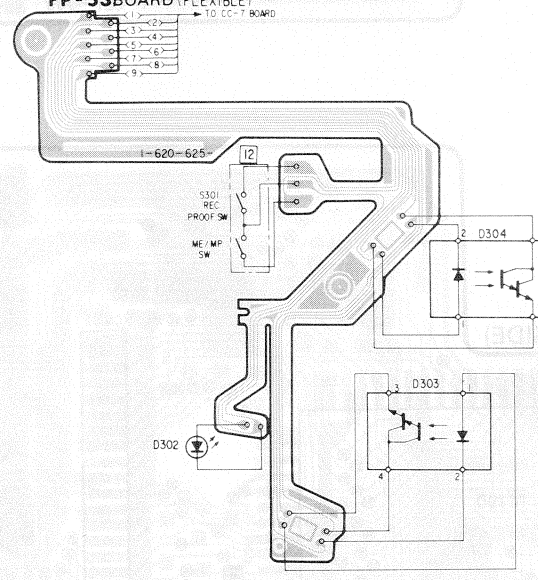

TO SS-86 BOARD CN002
D FG
D PG
D COM
GND
MECHA DECK GND
SHAFT GND
FG, PG
TO SS-86 BOARD CN001
DRUM (U)
DRUM (V)
COM
DRUM (W)
M
M901 DRUM MOTOR
DRUM


TO SS-86 BOARD FP-118 (1/2)
CAP (U)
CAP (V)
HE
VHE (+)
VHE (-)
CAP (W)
UHE (+)
UHE (-)
WHE (+)
WHE (-)
UNREG GND
C FG (-)
SV 5V
C FG (+)
SV GND
M902 CAPSTAN MOTOR
M
CAPSTAN FG
CAPSTAN MOTOR

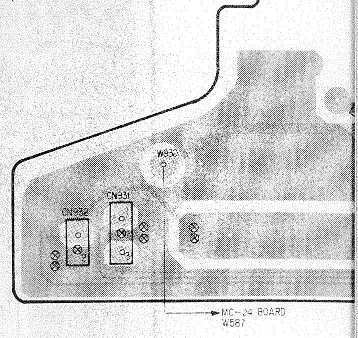
CC-7 BOARD


TO FP-53 BOARD
DEW SENSOR
MODE SW
TO SS-86 BOARD FP118
M903 LOADING MOTOR
1-620-631-
17
S902 CC DOWN SW

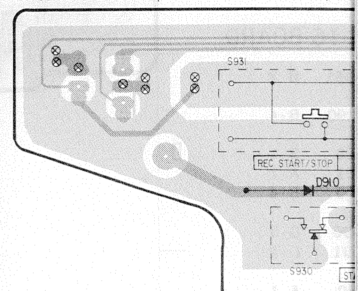
FP-53 BOARD (FLEXIBLE)


TO CC-7 BOARD
1-620-625-
12
S301 REC PROOF SW
ME/MP SW
D304
D303
D302

SW-92 BOARD
(COMPONENT SIDE)


W930
CN932
CN931
MC-24 BOARD W587

SW-92 BOARD(CONDUCTOR SIDE)


S931
REC START/STOP
D910
S930

CN001	D-5
CN002	D-7
CN003	C-10
CN004	A-11
CN005	I-5
CN006	B-14
CN007	H-16
D001	I-14
D003	E-15
D004	F-15
D007	E-10
D008	I-14
D050	H-15
D051	H-14
D200	H-6
D201	G-5
D203	D-11
IC001	D-2
IC002	B-15
IC003	F-4
IC004	F-5
IC005	B-3
IC006	E-6
IC007	F-7
IC200	H-10
IC201	H-12
IC202	G-4
IC203	I-7
IC301	C-6
Q001	B-2
Q002	B-14
Q005	B-13
Q006	G-14
Q007	E-10
Q008	G-14
Q051	H-15
Q052	H-15
Q053	G-2
Q054	E-6
Q055	F-2
Q070	F-3
Q071	F-15
Q073	F-15
Q074	F-15
Q076	F-14
Q078	F-14
Q079	F-15
Q080	F-14
Q081	F-2
Q201	H-7
Q202	I-7
Q203	I-5
Q204	H-7
Q205	H-7
Q206	G-10
Q302	C-4
Q303	C-13
Q304	C-11
Q305	B-5
Q307	C-11
Q317	C-11
Q318	D-11
Q319	D-15
Q320	C-5
Q321	E-15
RV001	C-14
RV002	D-15
RV200	I-9
RV301	A-9
RV302	B-9
RV306	A-12
TP001	C-1
TP002	F-1
TP003	C-3
TP004	D-8
TP006	E-1
TP007	E-4
TP303	C-23

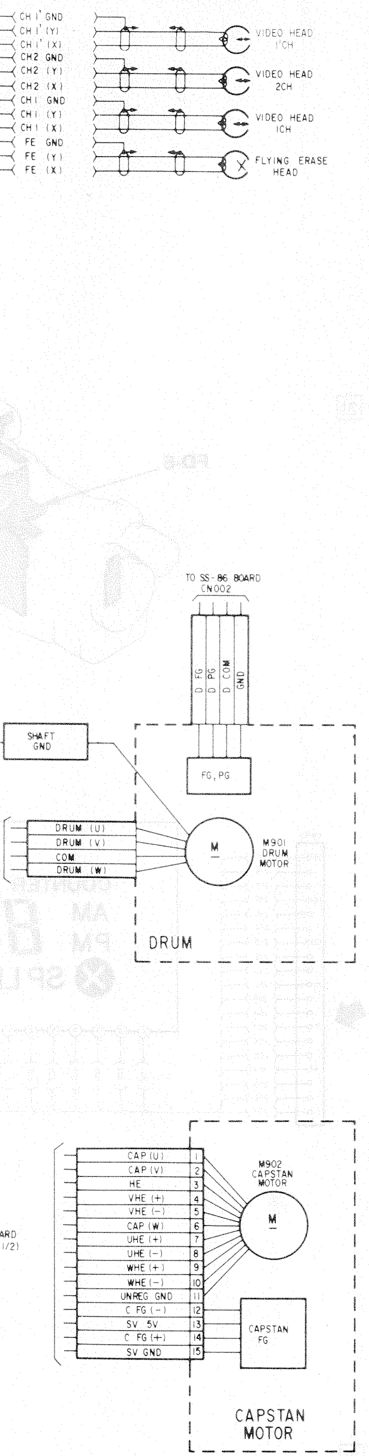
Note:

- ⊗ : Through
- ▨ : Pattern

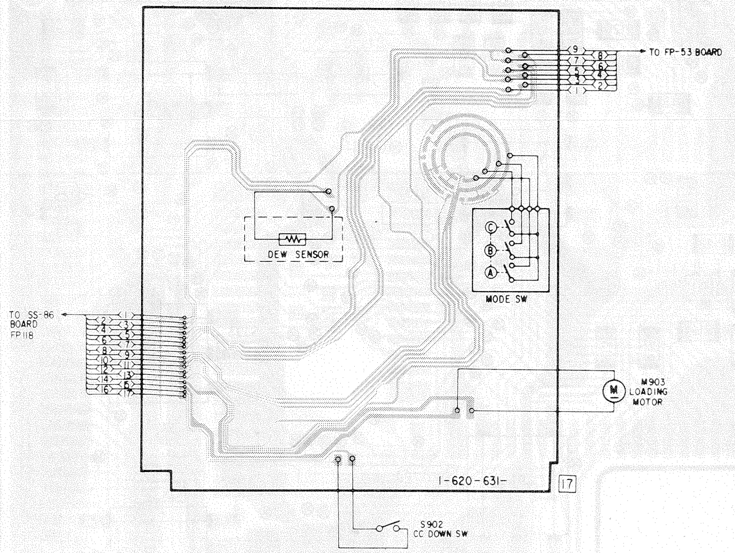
Caution:
Pattern face side:
(Conductor Side)

Parts face side:
(Component Side)

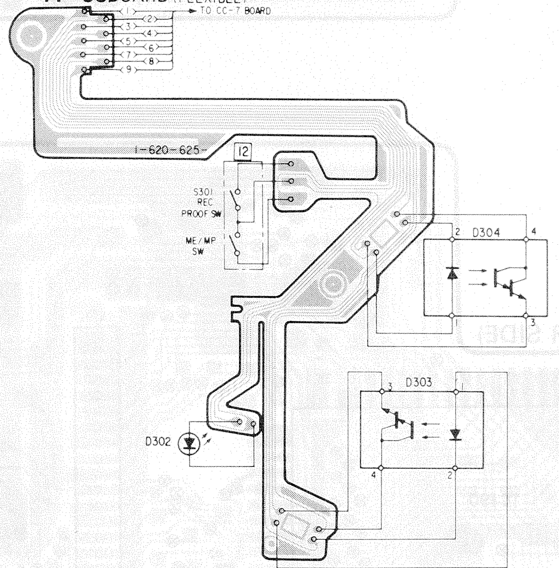
- Digital transisto
Q073, Q074, C
resistor.
Refer to the SS
transistor.


CH1' GND
CH1' (Y)
CH1' (X)
CH2 GND
CH2 (Y)
CH2 (X)
CH1 GND
CH1 (Y)
CH1 (X)
FE GND
FE (Y)
FE (X)
VIDEO HEAD 1CH
VIDEO HEAD 2CH
VIDEO HEAD 1CH
FLYING ERASE HEAD
TO SS-86 BOARD CN002
FG,PG
SHAFT GND
DRUM (U)
DRUM (V)
COM
DRUM (W)
M901 DRUM MOTOR
DRUM
CAP (U)
CAP (V)
HE
VHE (+)
VHE (−)
CAP (W)
UHE (+)
UHE (−)
WHE (+)
WHE (−)
UNREG GND
C FG (−)
5V 5V
C FG (+)
5V GND
M902 CAPSTAN MOTOR
CAPSTAN FG
CAPSTAN MOTOR

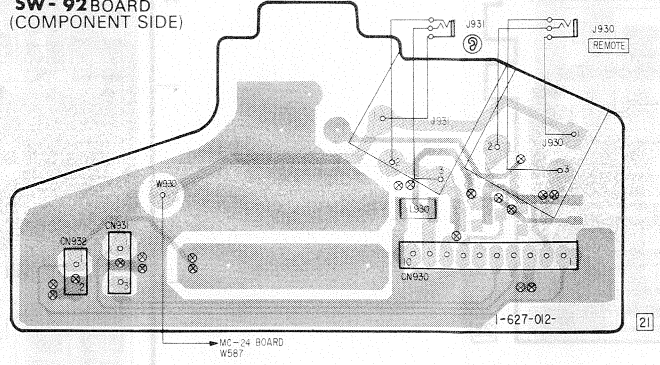
CC-7 BOARD


TO FP-53 BOARD
DEW SENSOR
MODE SW
TO SS-86 BOARD FP118
M903 LOADING MOTOR
1-620-631-
17
S902 CC DOWN SW

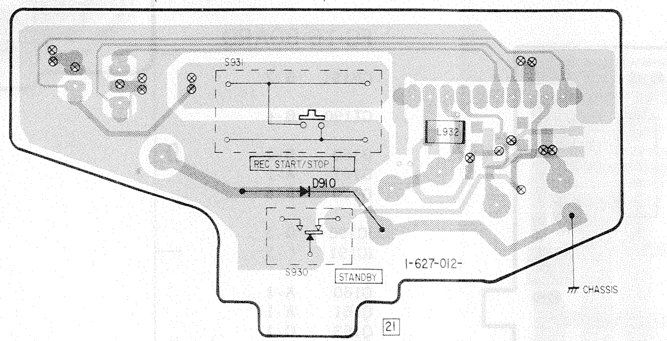
FP-53BOARD (FLEXIBLE)


TO CC-7 BOARD
1-620-625-
12
S301 REC PROOF SW
ME/MP SW
D304
D303
D302

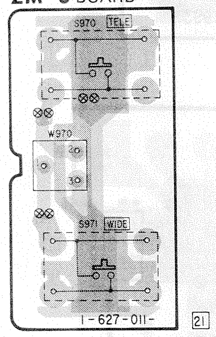
SW-92BOARD (COMPONENT SIDE)


J931
J930
REMOTE
CN932
CN931
CN930
MC-24 BOARD W587
1-627-012-
21

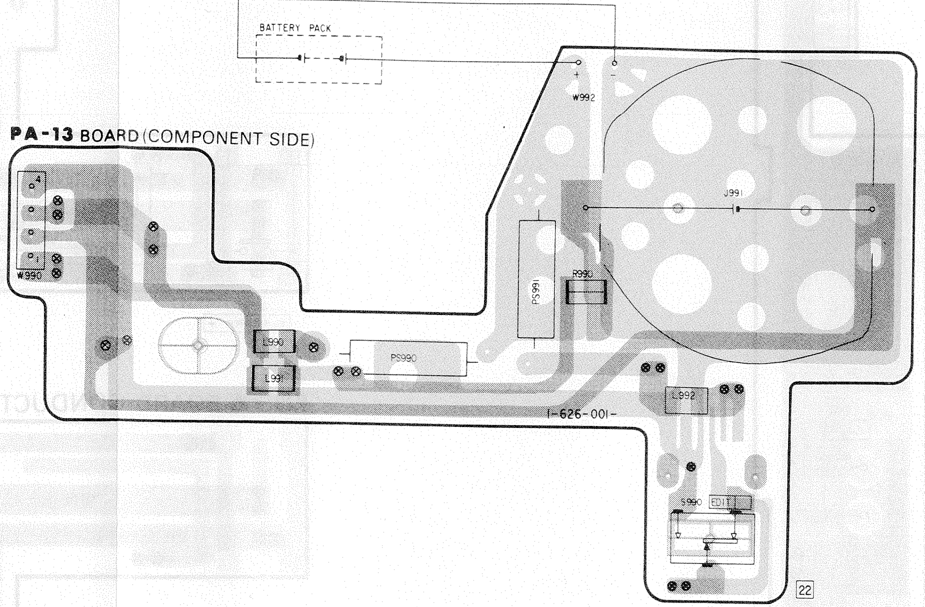
SW-92 BOARD(CONDUCTOR SIDE)


S931
S932
REC START/STOP
D910
S930
STANDBY
1-627-012-
CHASSIS
21

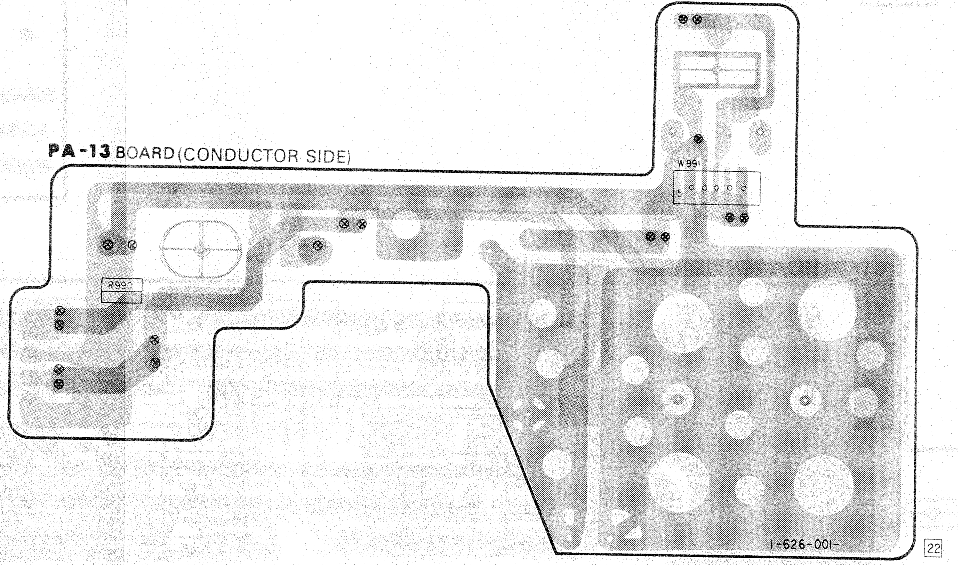
ZM-8 BOARD


S970
TELE
W970
S971
WIDE
1-627-011-
21

PA-13 BOARD(COMPONENT SIDE)


BATTERY PACK
W992
J991
W990
PS991
R990
L990
L991
PS990
L992
S990
EDIT
1-626-001-
22

PA-13 BOARD(CONDUCTOR SIDE)


W991
R990
1-626-001-
22

CN001	D-5
CN002	D-7
CN003	C-10
CN004	A-11
CN005	I-5
CN006	B-14
CN007	H-16
D001	I-14
D003	E-15
D004	F-15
D007	E-10
D008	I-14
D050	H-15
D051	H-14
D200	H-6
D201	G-5
D203	D-11
IC001	D-2
IC002	B-15
IC003	F-4
IC004	F-5
IC005	B-3
IC006	E-6
IC007	F-7
IC200	H-10
IC201	H-12
IC202	G-4
IC203	I-7
IC301	C-6
Q001	B-2
Q002	B-14
Q005	B-13
Q006	G-14
Q007	E-10
Q008	G-14
Q051	H-15
Q052	H-15
Q053	G-2
Q054	E-6
Q055	F-2
Q070	F-3
Q071	F-15
Q073	F-15
Q074	F-15
Q076	F-14
Q078	F-14
Q079	F-15
Q080	F-14
Q081	F-2
Q201	H-7
Q202	I-7
Q203	I-5
Q204	H-7
Q205	H-7
Q206	G-10
Q302	C-4
Q303	C-13
Q304	C-11
Q305	B-5
Q307	C-11
Q317	C-11
Q318	D-11
Q319	D-15
Q320	C-5
Q321	E-15
RV001	C-14
RV002	D-15
RV200	I-9
RV301	A-9
RV302	B-9
RV306	A-12
TP001	C-1
TP002	F-1
TP003	C-3
TP004	D-8
TP006	E-1
TP007	E-4
TP303	C-23

Note:

- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

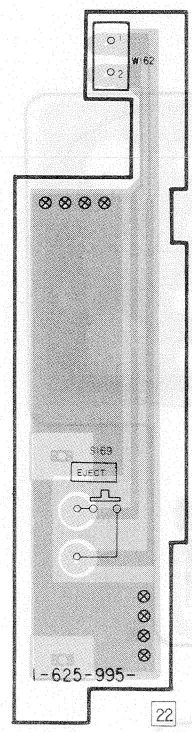
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (SS-86: Q007, Q053, Q055, Q071, Q073, Q074, Q076, Q078, Q079) is transistor with resistor.
  Refer to the SS-86 board schematic diagram for digital transistor.

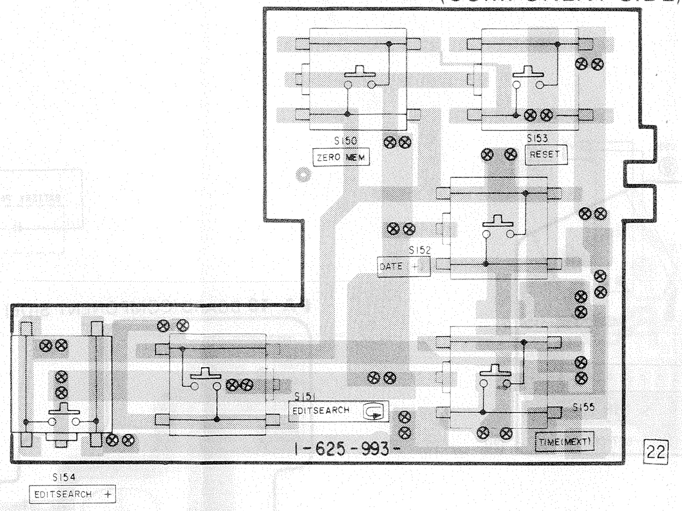
FC-16 (MODE CONTROL), FV-1 (POWER SWITCH, VTR FUNCTION SWITCH), FD-6 (CAMERA DATA FUNCTION SWITCH), EJ-4 (EJECT SWITCH) PRINTED WIRING BOARDS

– Ref. No. FC-16, FV-1, FD-6, EJ-4 BOARDS: 5,000 series –

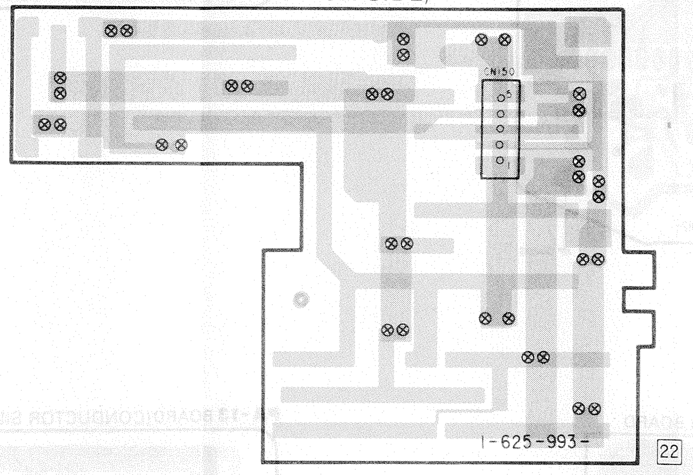
EJ-4 BOARD (COMPONENT SIDE)


W162
S169
EJECT
1-625-995-
22

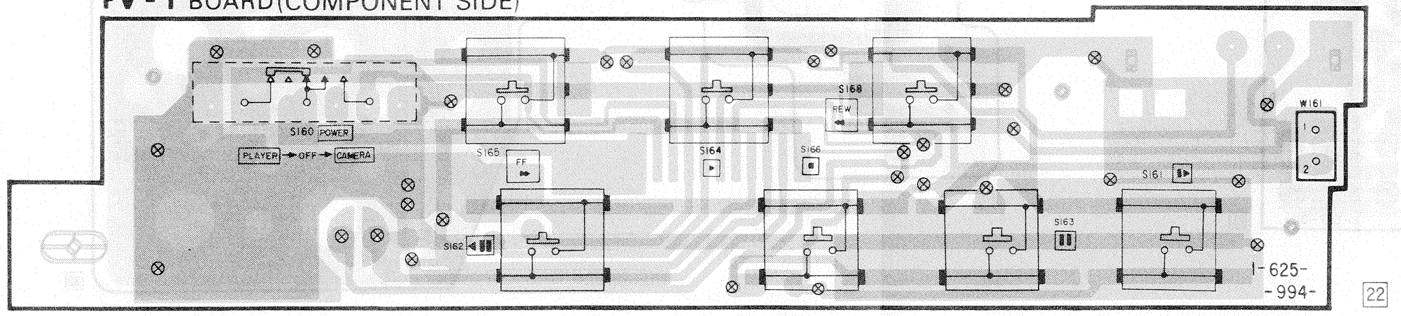
FD-6 BOARD (COMPONENT SIDE)


S150
ZERO MEM
S153
RESET
S152
DATE +
S151
EDITSEARCH
S155
TIME(NEXT)
S154
EDITSEARCH +
1-625-993-
22

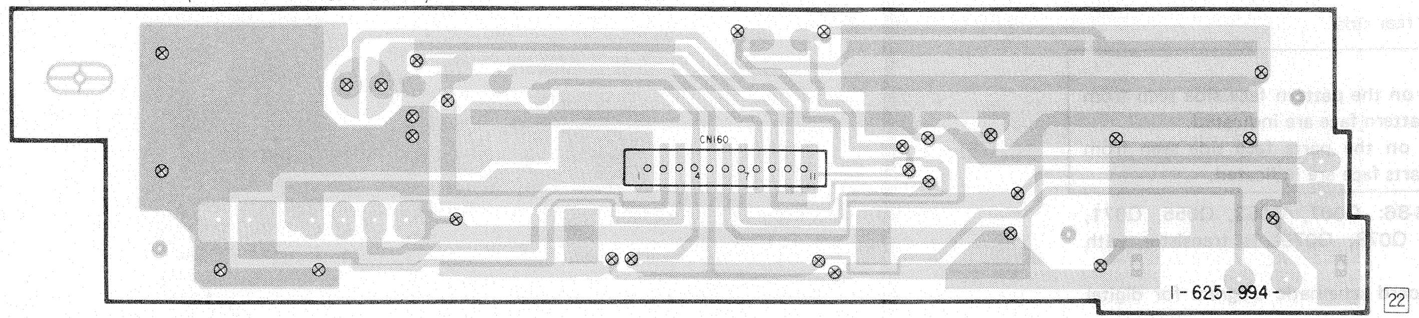
FD-6 BOARD (CONDUCTOR SIDE)


CN150
1-625-993-
22

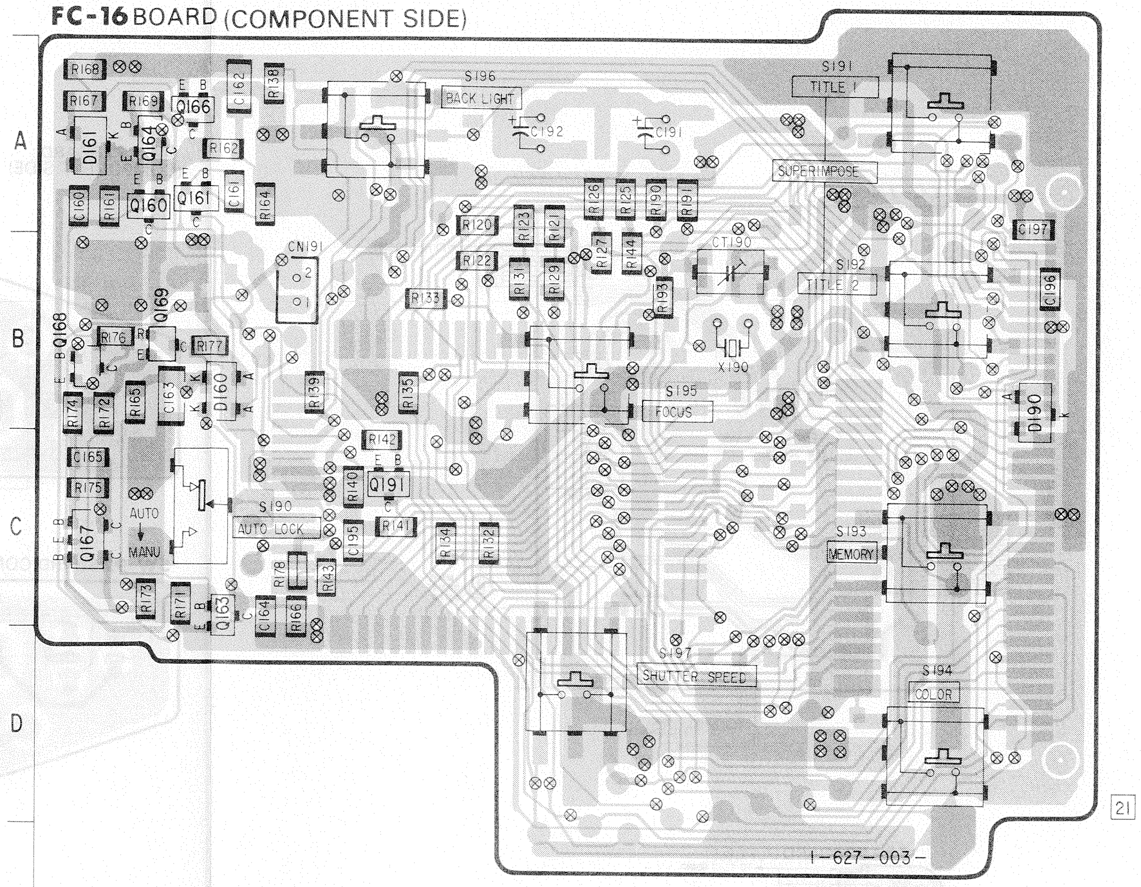
FV-1 BOARD (COMPONENT SIDE)


S160 POWER
PLAYER → OFF → CAMERA
S165
FF
S164
S166
S168
REW
S161
W161
S162
S163
1-625-994-
22

FV-1 BOARD (CONDUCTOR SIDE)


CN160
1-625-994-
22

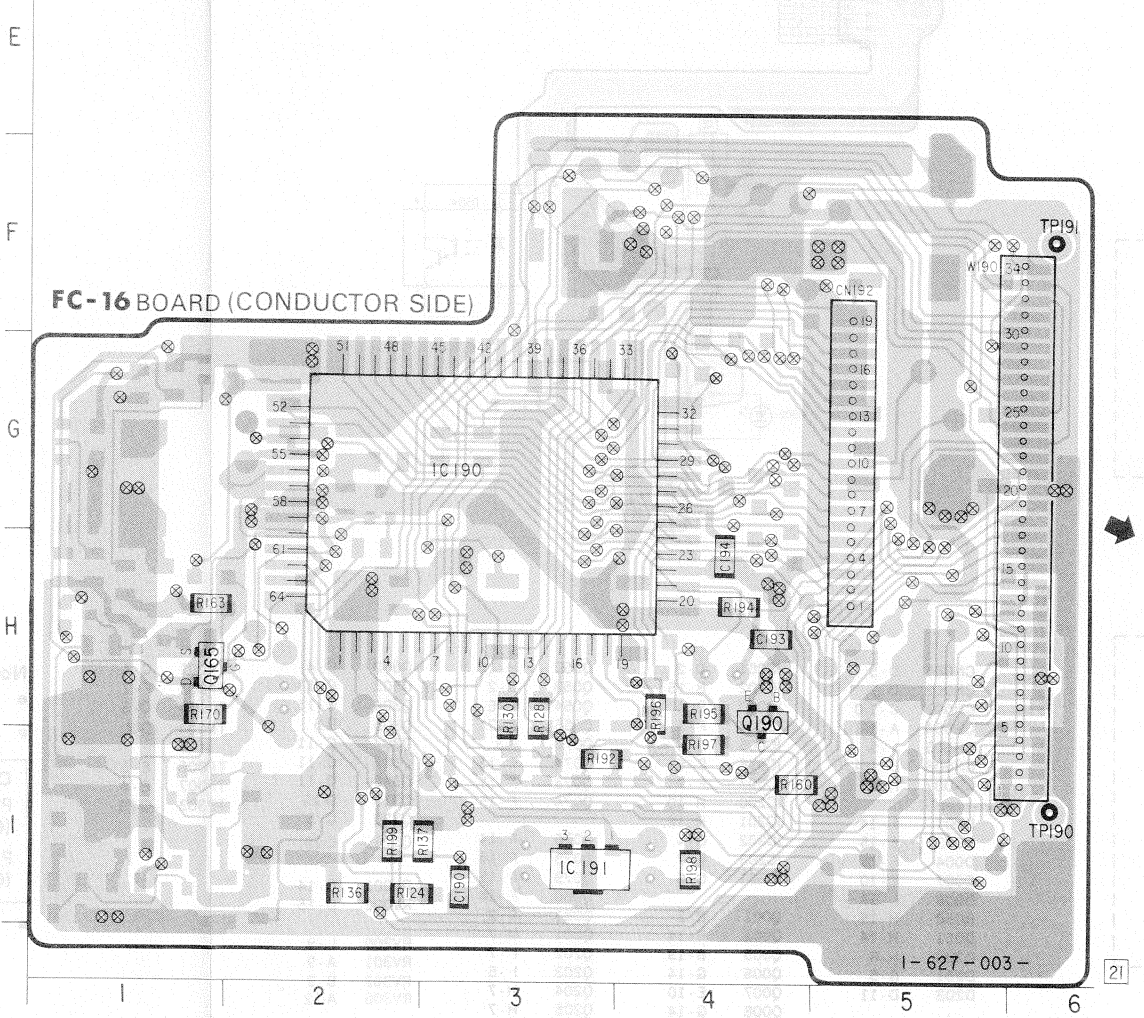
FC-16 BOARD (COMPONENT SIDE)


A
B
C
D
S196
BACK LIGHT
C192
C191
S191
TITLE 1
SUPERIMPOSE
S192
TITLE 2
CN191
CT190
X190
S195
FOCUS
S190
AUTO LOCK
AUTO
MANU
S193
MEMORY
S197
SHUTTER SPEED
S194
COLOR
Q160
Q161
Q163
Q164
Q166
Q167
Q168
Q169
Q191
D160
D161
D190
1-627-003-
21

FC-16 BOARD

CN191	B-2
CT190	B-4
D160	B-1
D161	A-1
D190	B-6
IC190	G-3
IC191	I-3
Q160	A-1
Q161	A-1
Q163	C-1
Q164	A-1
Q165	H-1
Q166	A-1
Q167	C-1
Q168	B-1
Q169	B-1
Q190	H-4
Q191	C-2
Q192	I-1
TP190	I-6
TP191	F-6

FC-16 BOARD (CONDUCTOR SIDE)

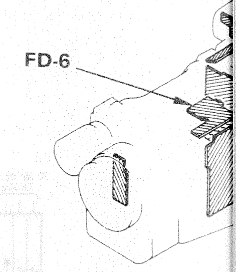

E
F
G
H
1
2
3
4
5
6
TP191
TP190
W190
CN192
IC190
IC191
Q165
Q190
1-627-003-
21

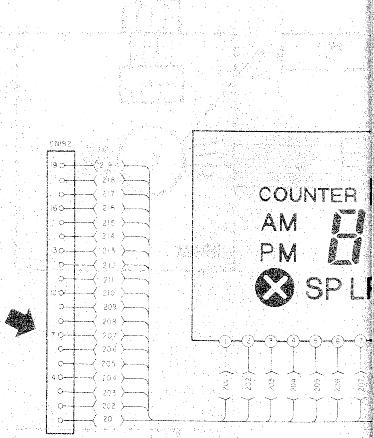
Note:
- ⊗ : Through hole.
- ▨ : Pattern of the rear

Caution:

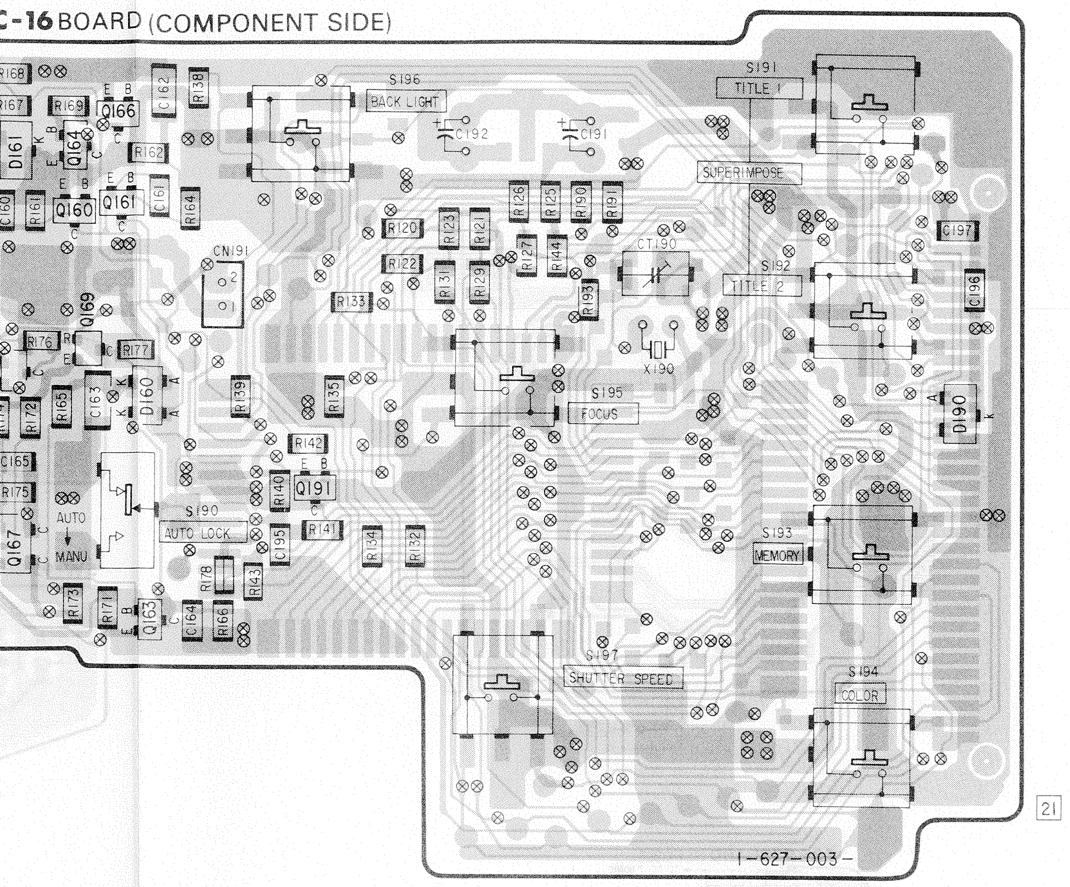
Pattern face side: (Conductor Side)	Parts on t the patter
Parts face side: (Component Side)	Parts on the parts f

- Digital transistor (FC-16: resistor. Refer to the FC-16 board transistor.




COUNTER
AM
PM
SP L

C-16 BOARD (COMPONENT SIDE)


S196
BACK LIGHT
S191
TITLE 1
SUPERIMPOSE
S192
TITLE 2
S195
FOCUS
S190
AUTO LOCK
AUTO
MANU
S193
MEMORY
S197
SHUTTER SPEED
S194
COLOR
CN191
CT190
X190
Q160
Q161
Q164
Q166
Q169
Q190
Q191
D160
D161
1-627-003-
21

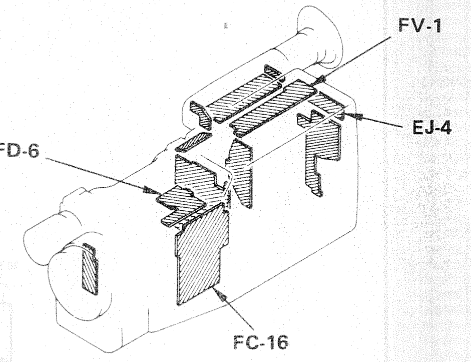
Note:

- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

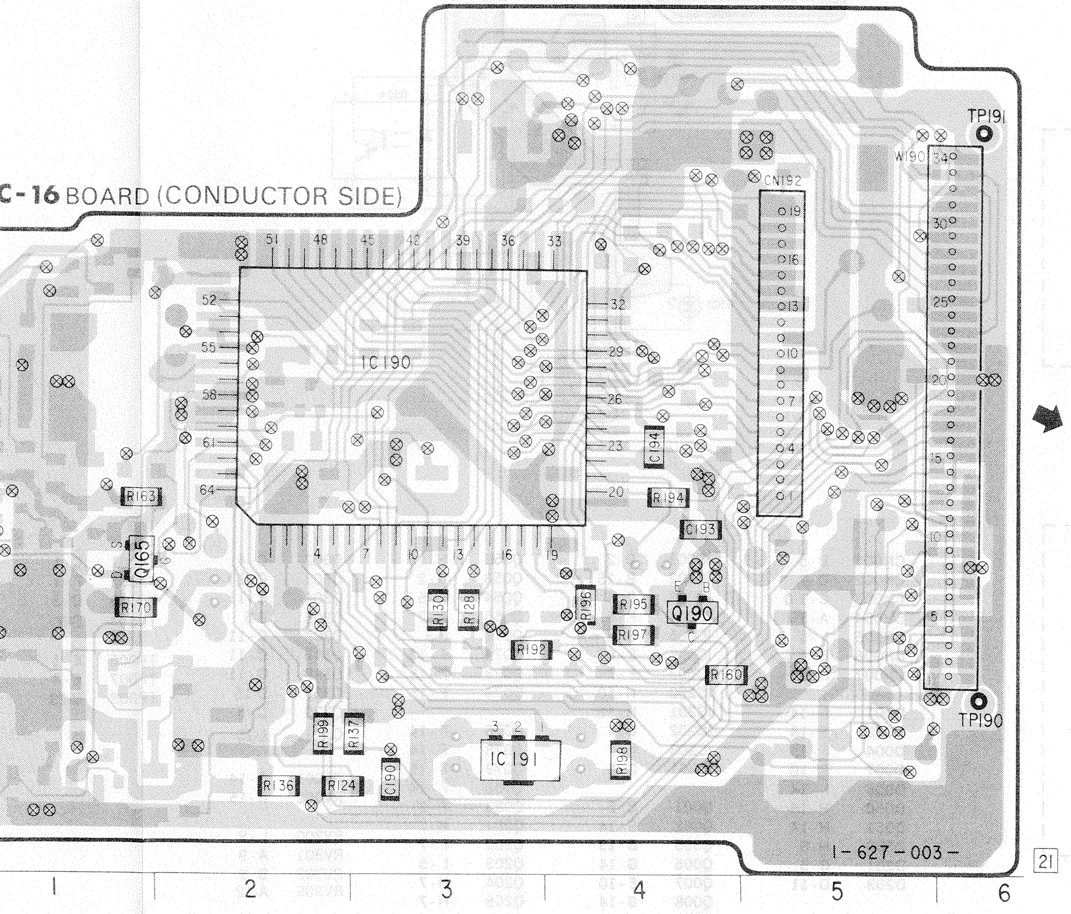
Caution:

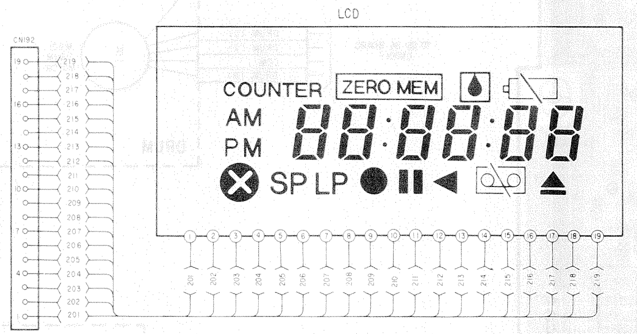
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (FC-16: Q169, Q190) is transistor with resistor.
  Refer to the FC-16 board schematic diagram for digital transistor.

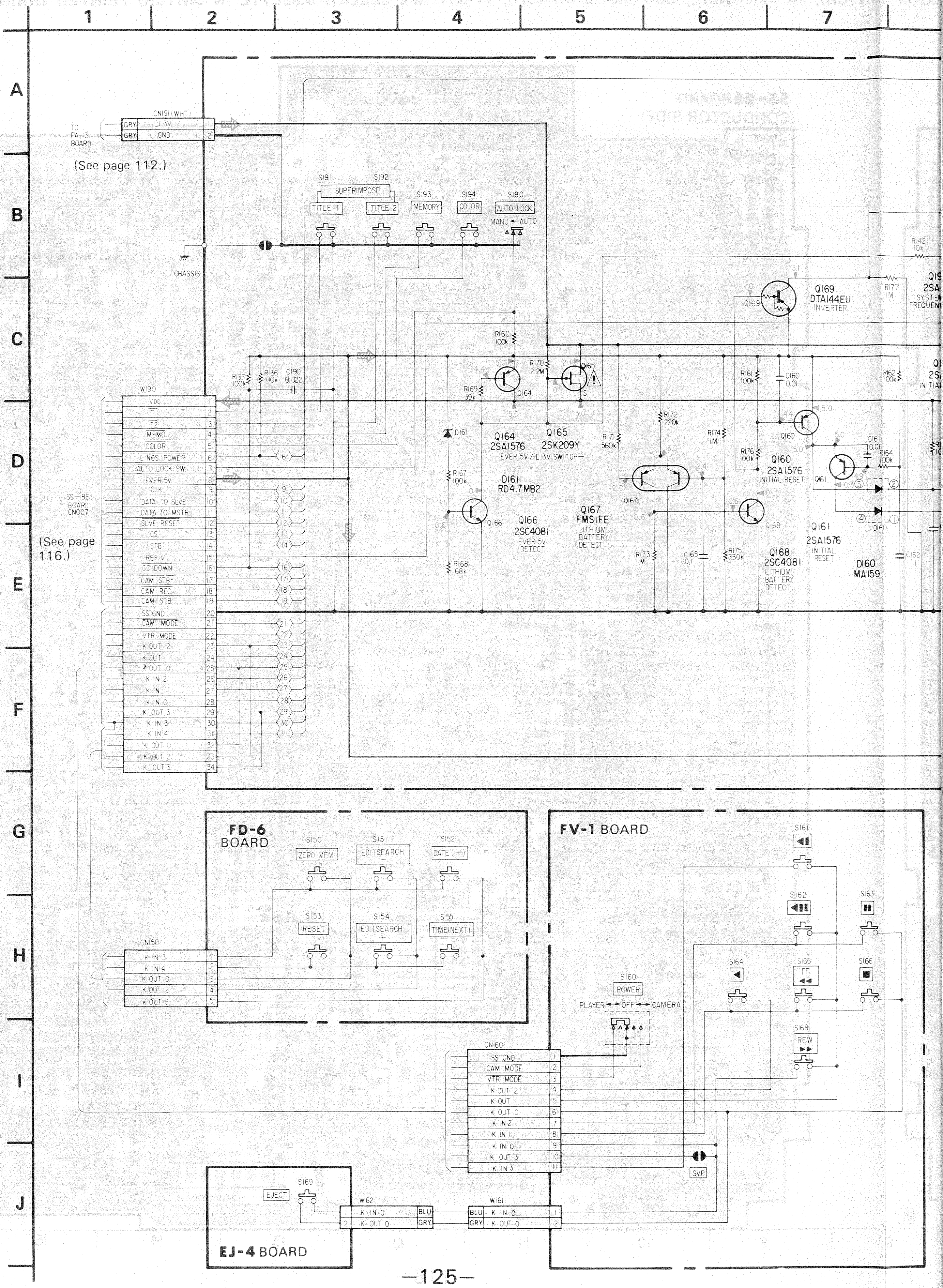

FV-1
EJ-4
FD-6
FC-16

C-16 BOARD (CONDUCTOR SIDE)


TP191
W190
CN192
IC190
IC191
Q165
Q190
TP190
1-627-003-
21
1
2
3
4
5
6


LCD
CN192
COUNTER
ZERO MEM
AM
PM
88:88:88
SP LP

FC-16 (MODE CONTROL), FV-1 (POWER SWITCH, VTR FUNCTION SWITCH), FD-6 (CAMERA DATA FUNCTION SWI


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
TO PA-13 BOARD
CN191 (WHT)
L13V
GND
(See page 112.)
CHASSIS
S191 TITLE 1
S192 TITLE 2
SUPERIMPOSE
S193 MEMORY
S194 COLOR
S190 AUTO LOCK
MANU ↔ AUTO
W190
VDD
T1
T2
MEMO
COLOR
L.INCS POWER
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF V
CC DOWN
CAM STBY
CAM REC
CAM STB
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K OUT 3
K IN 3
K IN 4
TO SS-86 BOARD CN007
(See page 116.)
Q164 2SA1576 — EVER 5V / L13V SWITCH —
Q165 2SK209Y
D161 RD4.7MB2
Q166 2SC4081 EVER 5V DETECT
Q167 FMS1FE LITHIUM BATTERY DETECT
Q168 2SC4081 LITHIUM BATTERY DETECT
Q169 DTA144EU INVERTER
Q160 2SA1576 INITIAL RESET
Q161 2SA1576 INITIAL RESET
D160 MA159
FD-6 BOARD
S150 ZERO MEM
S151 EDITSEARCH
S152 DATE (+)
S153 RESET
S154 EDITSEARCH
S155 TIME(NEXT)
CN150
FV-1 BOARD
S160 POWER
PLAYER ← OFF → CAMERA
S161
S162
S163
S164
S165 FF
S166
S168 REW
CN160
SVP
EJ-4 BOARD
S169 EJECT
W162
W161
BLU
GRY

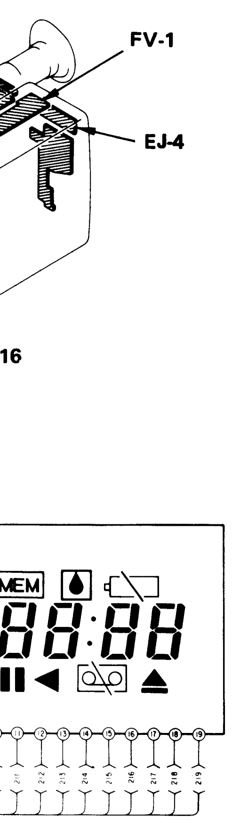
FC-16 (MODE CONTROL), FV-1 (POWER SWITCH, VTR FUNCTION SWITCH), FD-6 (CAMERA DATA FUNCTION SWITCH), EJ-4 (EJECT SWITCH) SCHEMATIC DIAGRAM

– Ref. No. FC-16, FV-1, FD-6, EJ-4 BOARDS: 5,000 series –

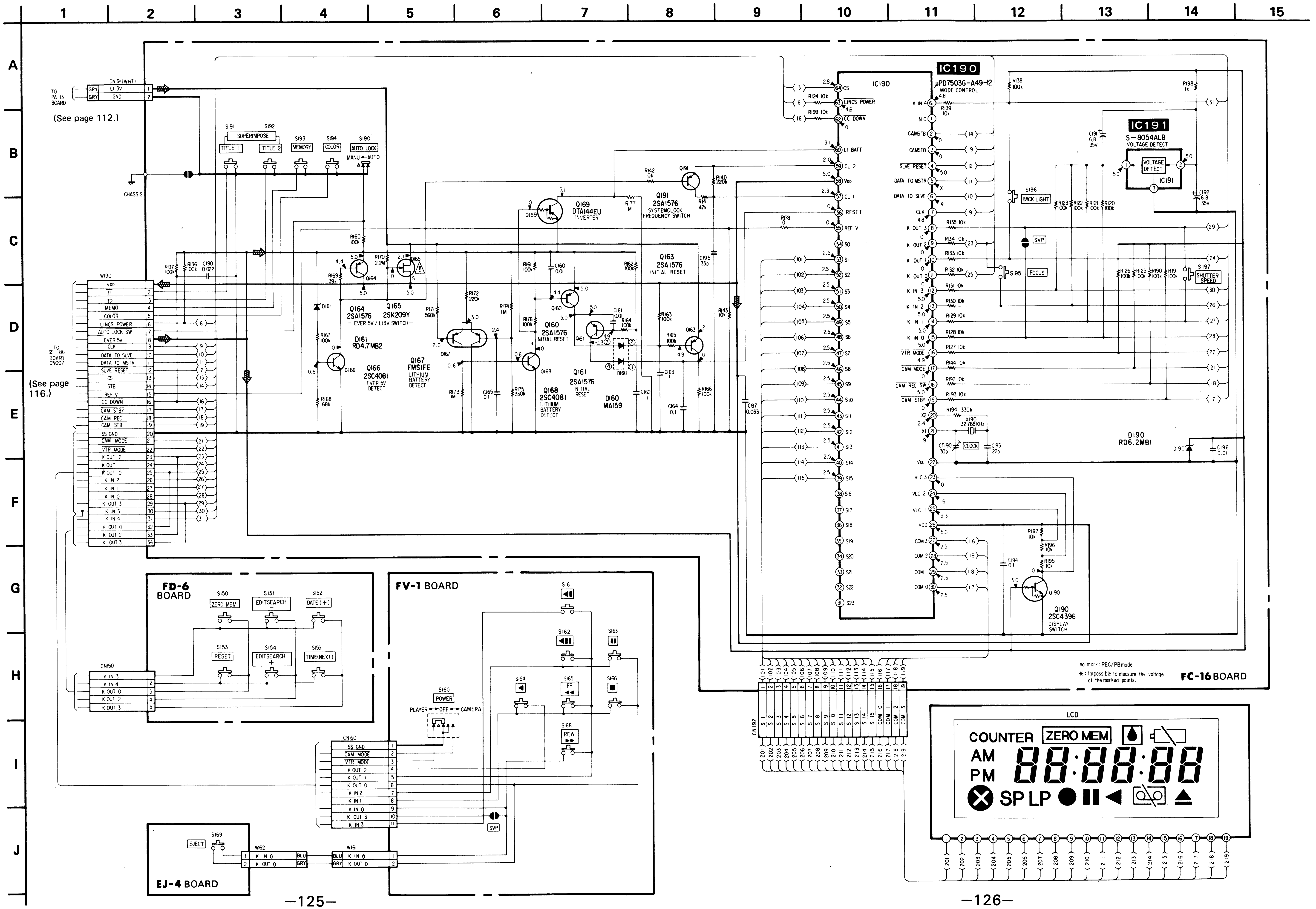
ern face side seen from
re indicated.
ts face side seen from
indicated.

Q190) is transistor with

atic diagram for digital



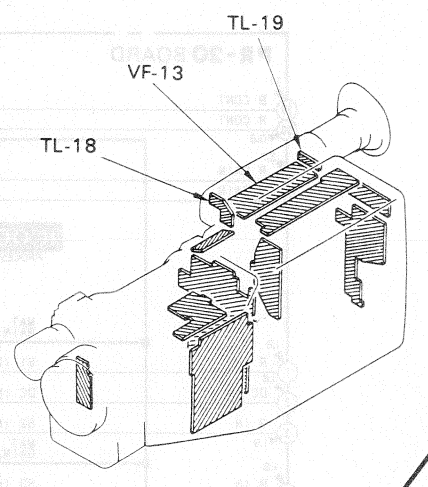
FV-1
EJ-4
16
MEM
88:88



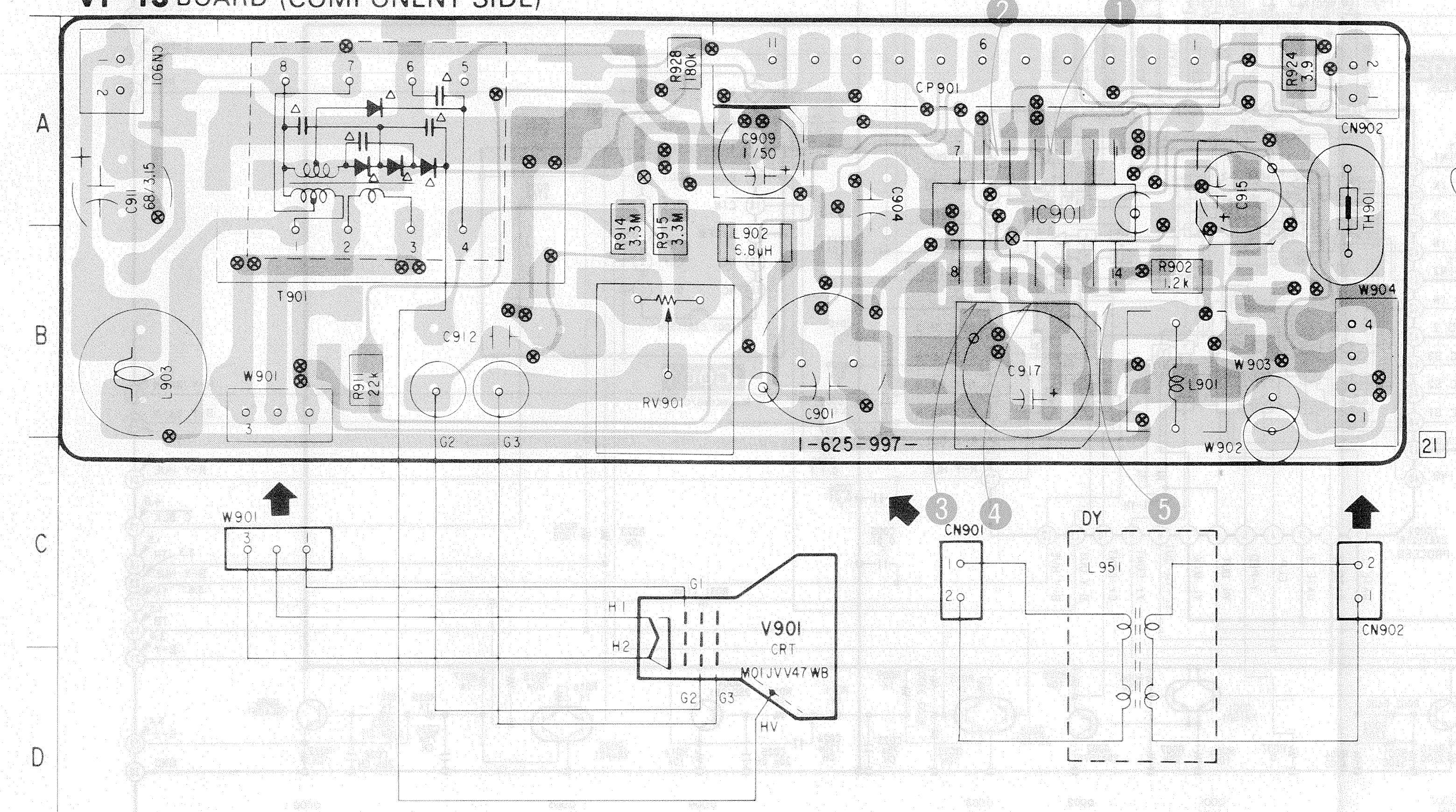
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J
TO PA-13 BOARD
(See page 112.)
CN191 (WHT)
GRY LI 3V
GRY GND
CHASSIS
S191 TITLE 1
S192 TITLE 2
SUPERIMPOSE
S193 MEMORY
S194 COLOR
S190 AUTO LOCK
MANU ← AUTO
W190
TO SS-86 BOARD CN007
(See page 116.)
VDD
T1
T2
MEMO
COLOR
LINCS POWER
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF V
CC DOWN
CAM STBY
CAM REC
CAM STB
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K OUT 3
K IN 3
K IN 4
Q164 2SA1576
Q165 2SK209Y
— EVER 5V / LI3V SWITCH —
D161 RD4.7MB2
Q166 2SC4081 EVER 5V DETECT
Q167 FMSIFE LITHIUM BATTERY DETECT
Q168 2SC4081 LITHIUM BATTERY DETECT
Q169 DTA144EU INVERTER
Q160 2SA1576 INITIAL RESET
Q161 2SA1576 INITIAL RESET
D160 MA159
Q191 2SA1576 SYSTEMCLOCK FREQUENCY SWITCH
Q163 2SA1576 INITIAL RESET
IC190
μPD7503G-A49-12 MODE CONTROL
CS
LINCS POWER
CC DOWN
LI BATT
CL 2
VDD
CL 1
RESET
REF V
S0 S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15 S16 S17 S18 S19 S20 S21 S22 S23
K IN 4
N.C
CAMSTB
SLVE RESET
DATA TO MSTR
DATA TO SLVE
CLK
K OUT 3
K OUT 2
K OUT 1
K OUT 0
K IN 3
K IN 2
K IN 1
K IN 0
VTR MODE
CAM MODE
CAM REC SW
CAM STBY
X2
X1
Vss
VLC 3
VLC 2
VLC 1
VDD
COM 3
COM 2
COM 1
COM 0
X190 32.768KHz
CLOCK
IC191 S-8054ALB VOLTAGE DETECT
S196 BACK LIGHT
SVP
S195 FOCUS
S197 SHUTTER SPEED
D190 RD6.2MB1
Q190 2SC4396 DISPLAY SWITCH
FD-6 BOARD
S150 ZERO MEM
S151 EDITSEARCH −
S152 DATE (+)
S153 RESET
S154 EDITSEARCH +
S155 TIME(NEXT)
CN150
FV-1 BOARD
S160 POWER
PLAYER ← OFF → CAMERA
S161
S162
S163
S164
S165 FF
S166
S168 REW
CN160
SVP
EJ-4 BOARD
S169 EJECT
W162
W161
BLU K IN 0
GRY K OUT 0
CN192
COM 0 COM 1 COM 2 COM 3
no mark : REC/PB mode
* : Impossible to measure the voltage at the marked points.
FC-16 BOARD
LCD
COUNTER
ZERO MEM
AM
PM
88:88:88
SP LP

VF-13 (VIEWFINDER), TL-18 (LED), TL-19 (LED) PRINTED WIRING BOARDS

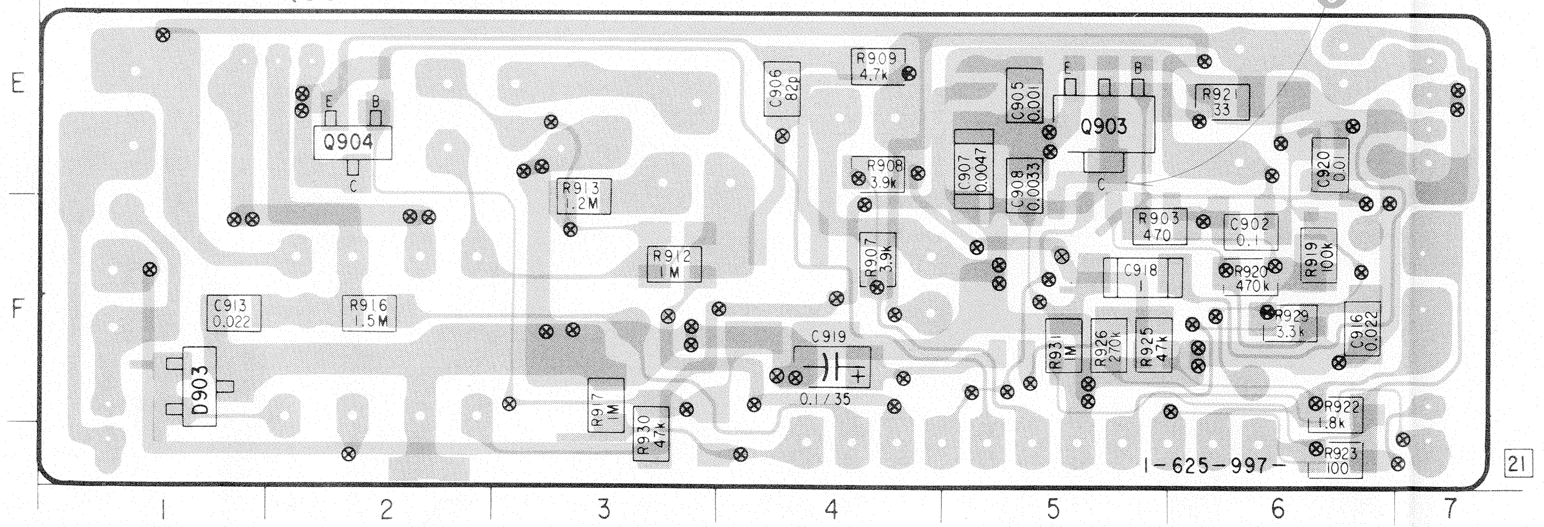
– Ref. No. VF-13, TL-18, TL-19 BOARDS: 6,000 series –


TL-19
VF-13
TL-18

VF-13 BOARD (COMPONENT SIDE)

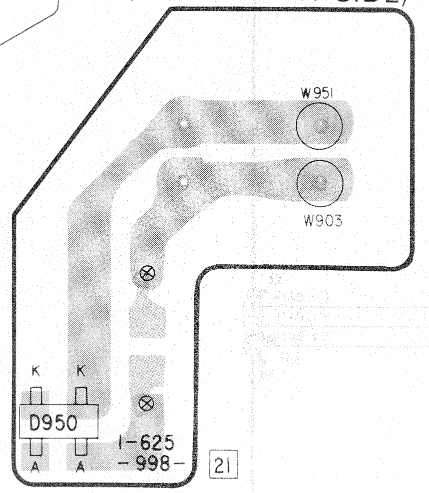

A
B
C
D
CN901
CN902
T901
C911 68/3.15
L903
W901
R911 22k
C912
G2
G3
RV901
C909 1/50
R914 3.3M
R915 3.3M
L902 5.8µH
R928 180k
CP901
C904
IC901
C901
C917
R902 1.2k
C915
R924 3.9
TH901
W904
W903
L901
W902
1-625-997-
21
DY
L951
V901
CRT
M01JVV47WB
H1
H2
G1
G2
G3
HV

VF-13 BOARD (CONDUCTOR SIDE)

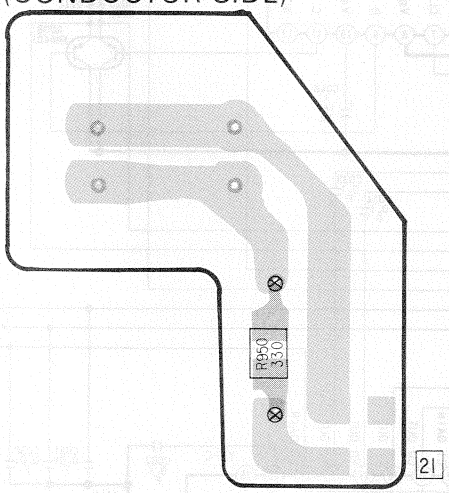

E
F
Q904
C913 0.022
R916 1.5M
D903
R913 1.2M
R912 1M
R917 1M
R930 47k
C906 82p
R909 4.7k
R908 3.9k
R907 3.9k
C919 0.1/35
C907 0.0047
C908 0.0033
C905 0.001
Q903
R921 33
R903 470
C902 0.1
C918 1
R920 470k
R919 100k
C920 0.01
R929 3.3k
C916 0.022
R931 1M
R926 270k
R925 47k
R922 1.8k
R923 100
1-625-997-
21
1
2
3
4
5
6
7

CN901	A-1
CN902	A-7
D903	F-1
IC901	A-5
Q903	E-5
Q904	E-2
RV901	B-3

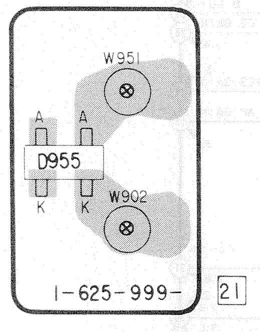
TL-18 BOARD (COMPONENT SIDE)


W951
W903
D950
K
A
1-625-998-
21

TL-18 BOARD (CONDUCTOR SIDE)



TL-19 BOARD (COMPONENT SIDE)


W951
D955
A
K
W902
1-625-999-
21

Note:
- ⊗ : Through hole.
- ▒ : Pattern of the rear side.

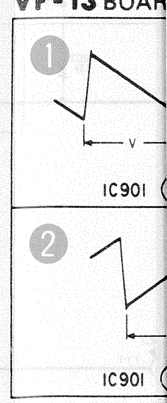
Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

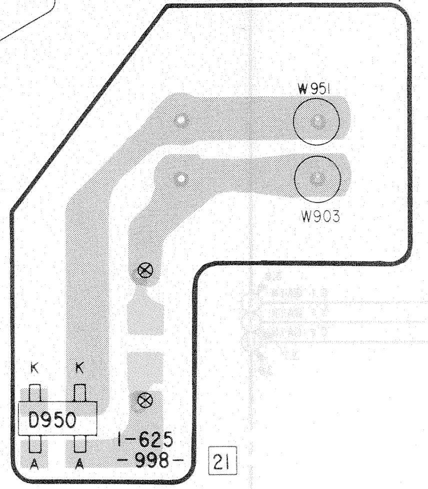
VF-13 (VIEW

– Ref. No. VF-

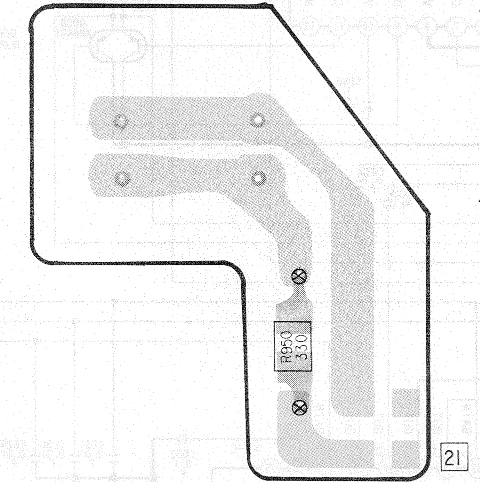
VF-13 BOAR


IC901
IC901

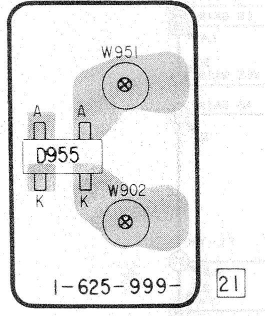
TL-18 BOARD
(COMPONENT SIDE)


W951
W903
K
K
D950
A
A
1-625-998-
21

TL-18 BOARD
(CONDUCTOR SIDE)



TL-19 BOARD (COMPONENT SIDE)


W951
A
A
D955
K
K
W902
1-625-999-
21

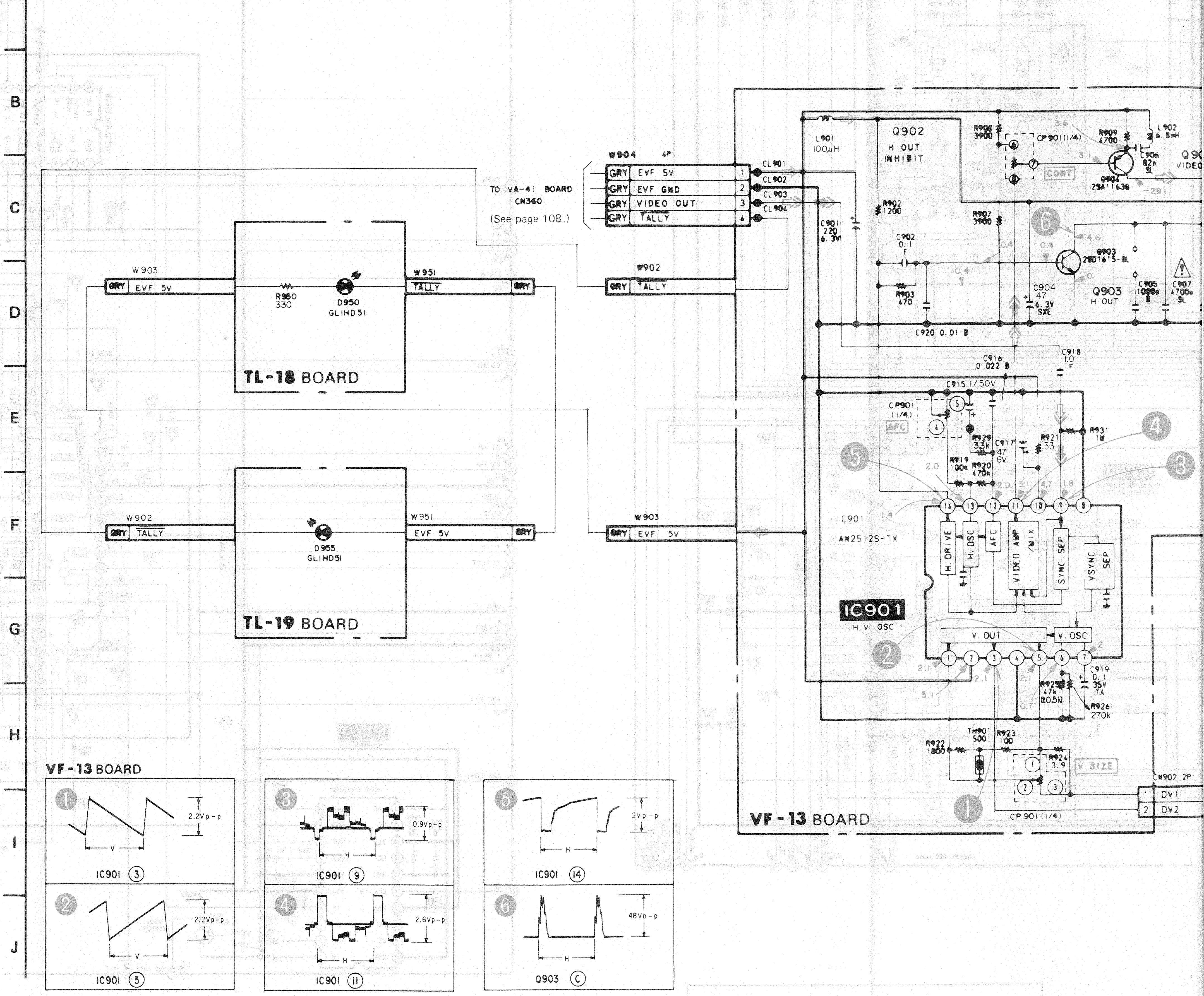
Note:
- ● ⊗ : Through hole.
- ● ▒ : Pattern of the rear side.

Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

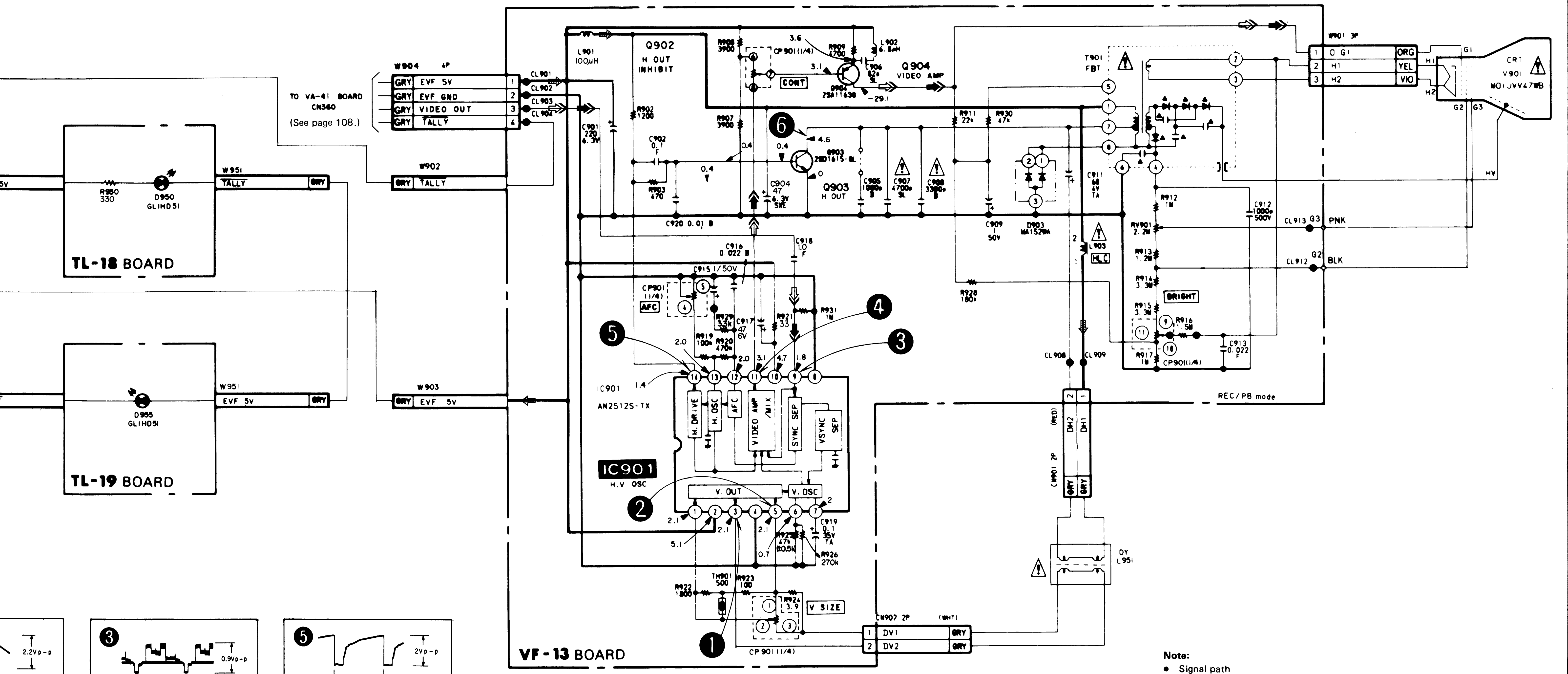
VF-13 (VIEWFINDER), TL-18 (LED), TL-19 (LED) SCHEMATIC DIAGRAM

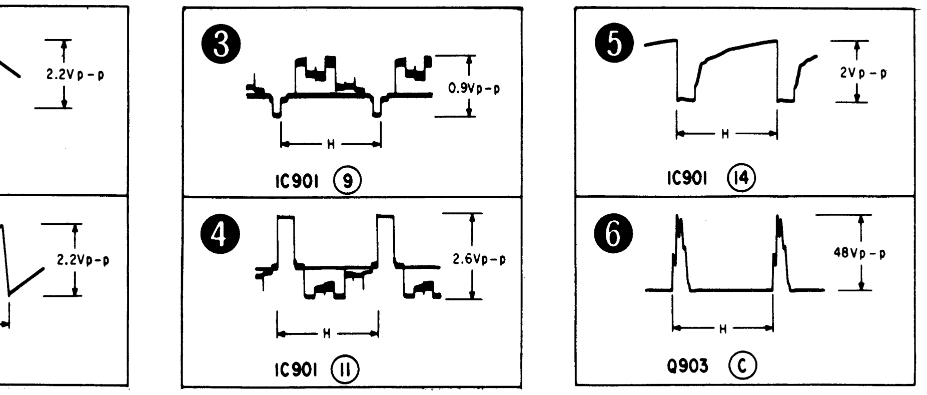
– Ref. No. VF-13, TL-18, TL-19 BOARDS: 6,000 series –


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
W903
GRY EVF 5V
R950
330
D950
GL1HD51
W951
TALLY
GRY
TL-18 BOARD
W902
GRY TALLY
D955
GL1HD51
W951
EVF 5V
GRY
TL-19 BOARD
TO VA-41 BOARD
CN360
(See page 108.)
W904 4P
GRY EVF 5V 1
GRY EVF GND 2
GRY VIDEO OUT 3
GRY TALLY 4
W902
GRY TALLY
W903
GRY EVF 5V
CL901
CL902
CL903
CL904
L901
100μH
C901
220
6.3V
Q902
H OUT
INHIBIT
R902
1200
C902
0.1
F
R903
470
C920 0.01 B
R908
3900
R907
3900
CP901 (1/4)
CONT
R909
4700
3.6
3.1
Q904
2SA1163B
C906
82p
SL
L902
6.8mH
-29.1
VIDEO
6
4.6
0.4
0.4
0.4
0
Q903
2SD1615-BL
Q903
H OUT
C904
47
6.3V
SXE
C905
1000p
B
C907
4700p
SL
C916
0.022 B
C918
1.0
F
C915 1/50V
CP901
(1/4)
AFC
5
4
R929
3.3k
C917
47
6V
R921
33
R931
1M
R919
100k
R920
470k
2.0
2.0
3.1
4.7
1.8
1.4
IC901
AN2512S-TX
14
13
12
11
10
9
8
H. DRIVE
H. OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
IC901
H.V OSC
V. OUT
V. OSC
1
2
3
4
5
6
7
2.1
2.1
5.1
2.1
0.7
2
C919
0.1
35V
TA
R925
47k
(10.5k)
R926
270k
TH901
500
R923
100
R922
1800
R924
3.9
V SIZE
1
2
3
CP901 (1/4)
CN902 2P
1 DV1
2 DV2
VF-13 BOARD
VF-13 BOARD
1
2.2Vp-p
V
IC901 3
2
2.2Vp-p
V
IC901 5
3
0.9Vp-p
H
IC901 9
4
2.6Vp-p
H
IC901 11
5
2Vp-p
H
IC901 14
6
48Vp-p
H
Q903 C

DER), TL-18 (LED), TL-19 (LED) SCHEMATIC DIAGRAM

-18, TL-19 BOARDS: 6,000 series –


TO VA-41 BOARD CN360
(See page 108.)
W904 4P
GRY EVF 5V
GRY EVF GND
GRY VIDEO OUT
GRY TALLY
CL901
CL902
CL903
CL904
W902
TALLY
W903
EVF 5V
W951
R950 330
D950 GL1HD51
TL-18 BOARD
D955 GL1HD51
TL-19 BOARD
L901 100μH
Q902 H OUT INHIBIT
C901 220 6.3V
R902 1200
C902 0.1 F
R903 470
C920 0.01 B
R908 3900
R907 3900
CP901(1/4)
CONT
3.6
3.1
R909 4700
Q904 2SA1163B
L902 6.8mH
C906 82p SL
Q904 VIDEO AMP
-29.1
4.6
0.4
Q903 2SD1615-GL
Q903 H OUT
C904 47 6.3V SXE
C905 1000p
C907 4700p SL
C908 3300p B
R911 22k
R930 47k
T901 FBT
C909 1 50V
D903 MA152WA
C911 68 4V TA
L903 HLC
R928 180k
C916 0.022 B
C918 1.0 F
C915 1/50V
CP901 (1/4) AFC
R929 3.3k
C917 47 6V
R921 33
R931 1M
R919 100k
R920 470k
2.0
2.0
3.1
4.7
1.8
1.4
IC901 AN2512S-TX
H. DRIVE
H. OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
IC901 H.V OSC
V. OUT
V. OSC
2.1
5.1
2.1
0.7
R925 47k 0.5W
C919 0.1 35V TA
R926 270k
R922 1800
TH901 500
R923 100
R924 3.9
V SIZE
CP901 (1/4)
VF-13 BOARD
CN907 2P (WHT)
DV1
DV2
DY L951
CN901 2P
DH1
DH2
(RED)
CL908
CL909
REC/PB mode
R912 1M
RV901 2.2M
R913 1.2M
R914 3.3M
R915 3.3M
BRIGHT
R916 1.5M
R917 1M
C913 0.022 F
CP901(1/4)
C912 1000p 500V
CL913 G3 PNK
CL912 G2 BLK
W901 3P
G1 ORG
H1 YEL
H2 VIO
CRT V901 M01JVV47WB
HV

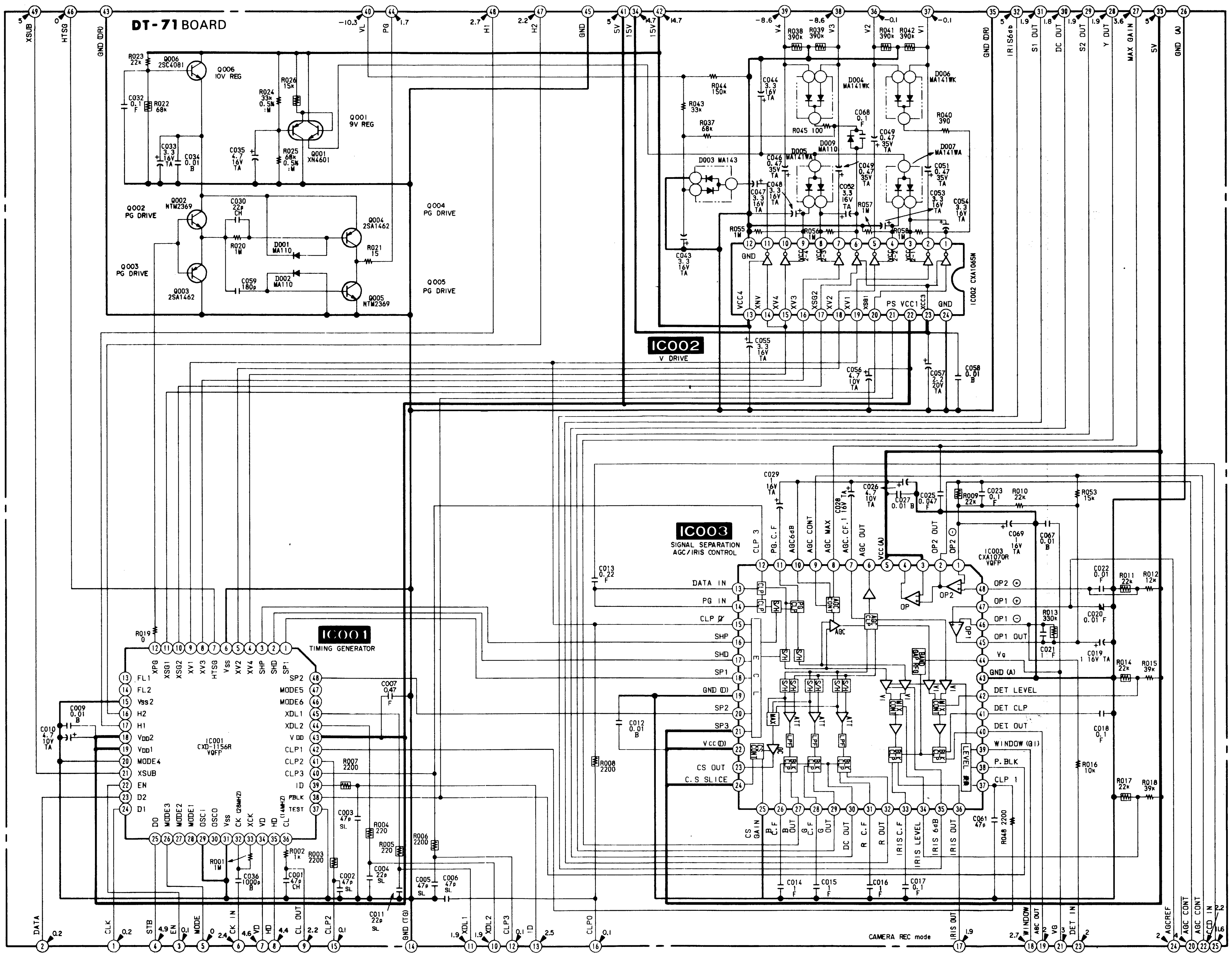


Note:

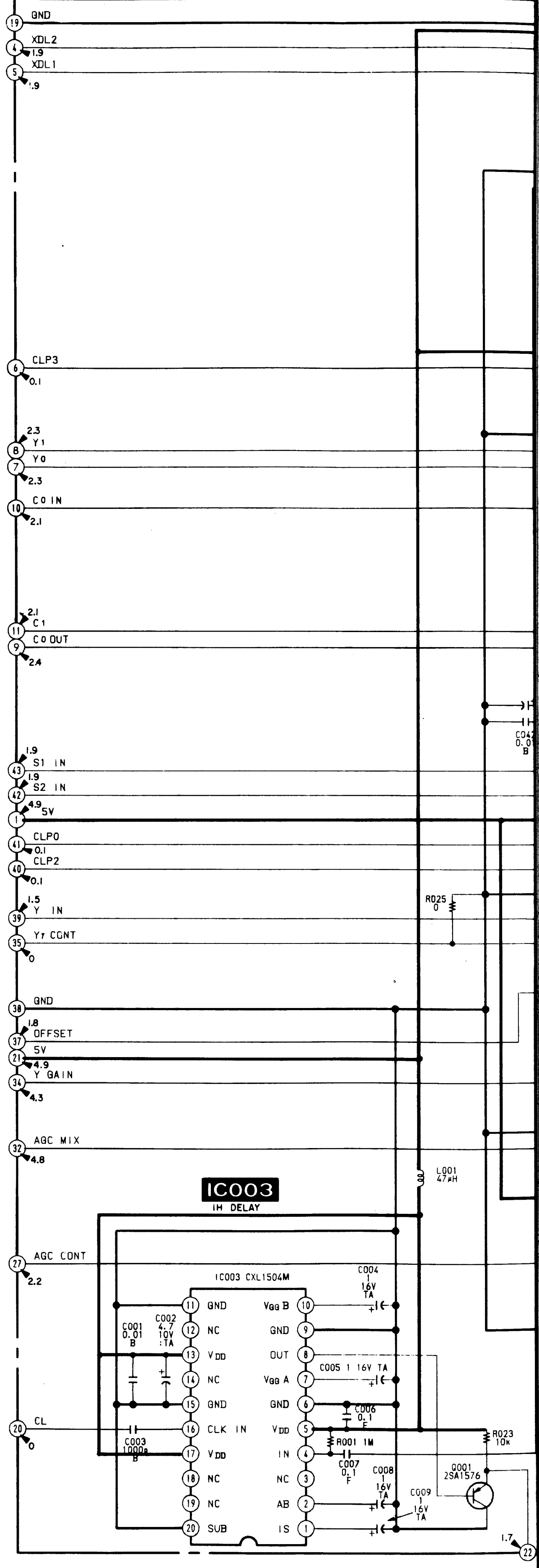
- Signal path
  - ➡ : REC Y/CHROMA Signal
  - ⇨ : PB Y/CHROMA Signal

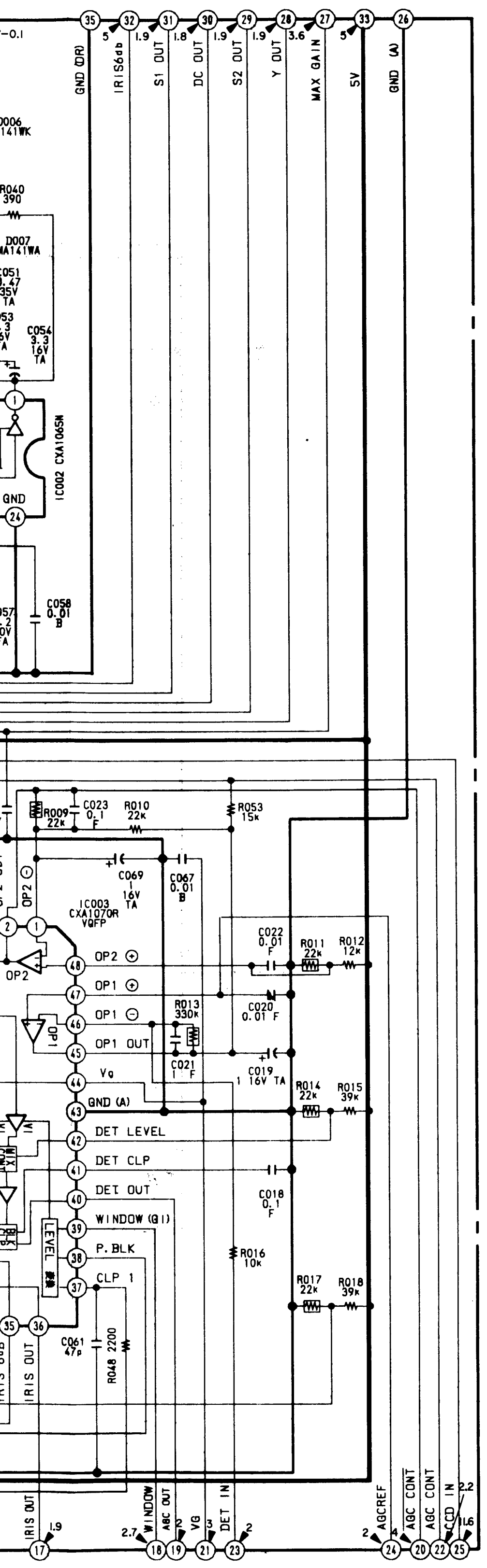
4-3. HYBRID IC SCHEMATIC DIAGRAMS; DT-71, MX-7, AND PR-20 BOARDS

- DT-71 BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.

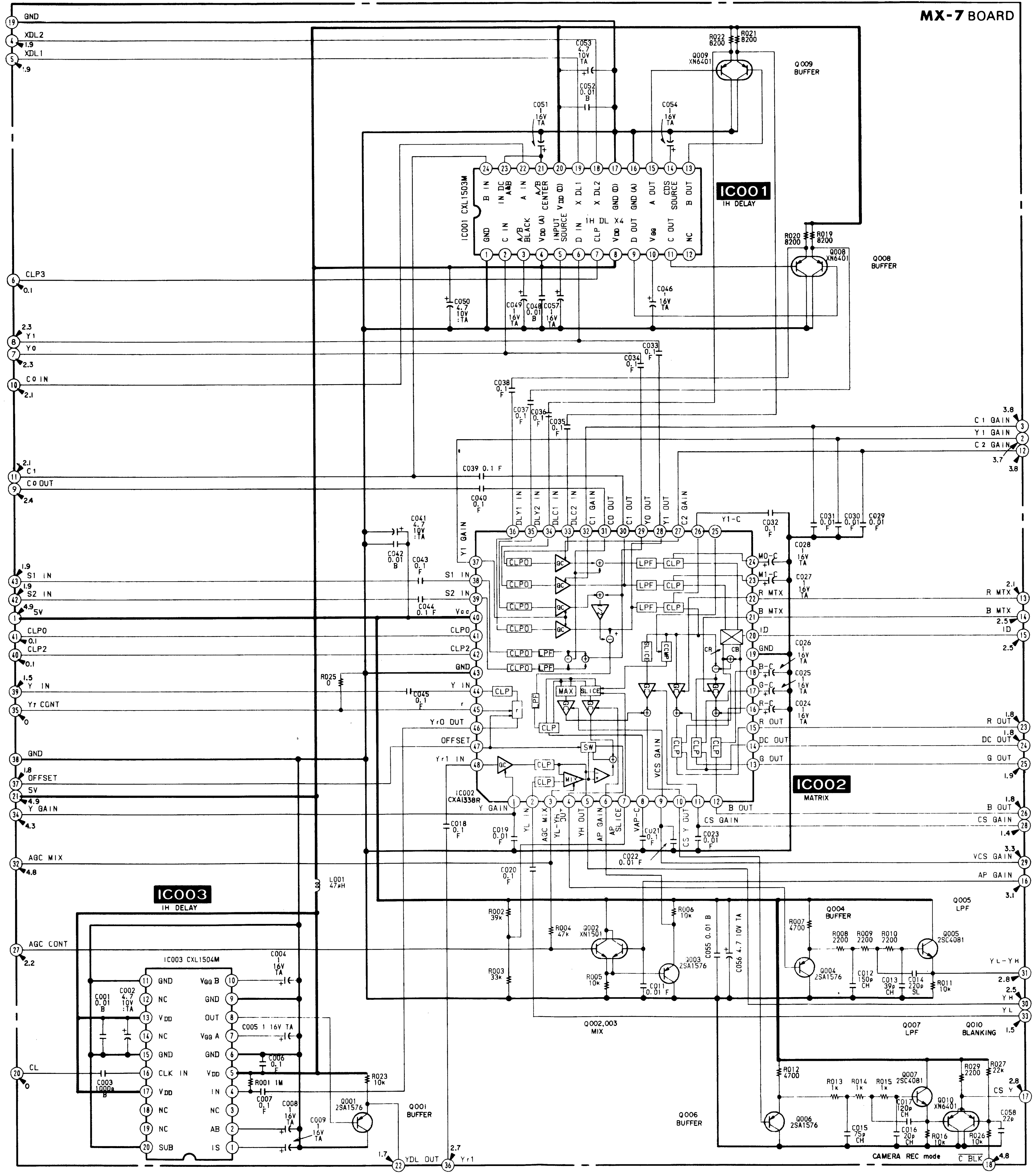

1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J
DT-71 BOARD
XSUB
HTSG
GND (D)
VL
PG
H1
H2
GND
5V
15V
15V
V4
V3
V2
V1
GND (D)
IRIS6dB
S1 OUT
DC OUT
S2 OUT
Y OUT
MAX GAIN
5V
GND (A)
Q006 2SC4081
10V REG
Q001 9V REG
Q001 XN4601
Q002 PG DRIVE
Q002 NTM2369
Q003 PG DRIVE
Q003 2SA1462
Q004 PG DRIVE
Q004 2SA1462
Q005 PG DRIVE
Q005 NTM2369
D001 MA110
D002 MA110
D003 MA143
D004 MA141WK
D005 MA141WA
D006 MA141WK
D007 MA141WA
D009 MA110
IC002
V DRIVE
IC002 CXA1065M
GND
VCC4
XV4
XV3
XSG2
XV2
XV1
XSG1
PS
VCC1
VCC3
IC003
SIGNAL SEPARATION
AGC/IRIS CONTROL
IC003 CXA1070R VQFP
CLP 3
PG.C.F
AGC6dB
AGC CONT
AGC MAX
AGC.CF.1
AGC OUT
VCC (A)
OP2 OUT
OP2 ⊖
DATA IN
PG IN
CLP Ø
SHP
SHD
SP1
GND (D)
SP2
SP3
Vcc (D)
CS OUT
C.S SLICE
OP2 ⊕
OP1 ⊕
OP1 ⊖
OP1 OUT
Vq
GND (A)
DET LEVEL
DET CLP
DET OUT
WINDOW (G I)
P.BLK
CLP 1
CS GAIN
B.C.F
B OUT
G.C.F
G OUT
DC OUT
R.C.F
R OUT
IRIS.C.F
IRIS LEVEL
IRIS 6dB
IRIS OUT
IC001
TIMING GENERATOR
IC001 CXD-1156R VQFP
XPG
XSG1
XSG2
XV1
XV3
HTSG
Vss
XV2
XV4
SHP
SHD
SP1
FL1
FL2
Vss2
H2
H1
VDD2
VDD1
MODE4
XSUB
EN
D2
D1
SP2
MODE5
MODE6
XDL1
XDL2
V DD
CLP1
CLP2
CLP3
ID
PBLK
TEST
D0
MODE3
MODE2
MODE1
OSCO
OSCI
Vss
CK
XCK
VD
HD
CL
DATA
CLK
STB
EN
MODE
CK IN
VD
HD
CL OUT
CLP2
GND (TG)
XDL1
XDL2
CLP3
ID
CLP0
CAMERA REC mode
IRIS OUT
WINDOW
AGC OUT
VG
DET IN
AGCREF
AGC CONT
AGC CONT
CCD IN

- MX-7 BOARD is replaced as a block, so the PRINTED

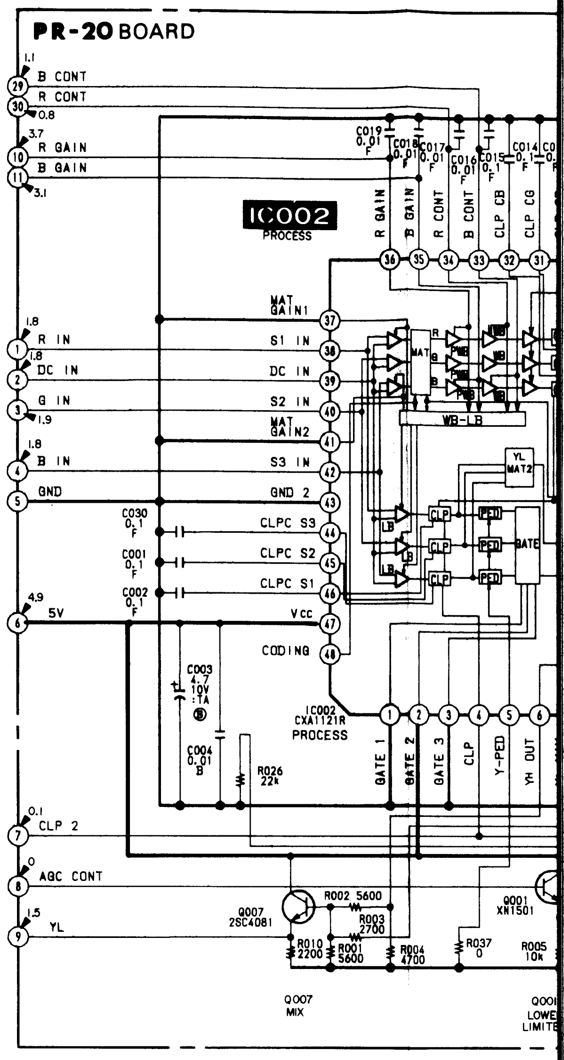

14
15
16
GND
XDL2
XDL1
CLP3
Y1
Y0
C0 IN
C1
C0 OUT
S1 IN
S2 IN
5V
CLP0
CLP2
Y IN
Yr CGNT
GND
OFFSET
5V
Y GAIN
AGC MIX
AGC CONT
CL
IC003
1H DELAY
IC003 CXL1504M
GND
NC
VDD
NC
GND
CLK IN
VDD
NC
NC
SUB
VGG B
GND
OUT
VGG A
GND
VDD
IN
NC
AB
IS
Q001 2SA1576
L001 47µH


IC002 CXA1065M
IC003 CXA1070R VGFP
GND (DR)
IRIS6db
S1 OUT
DC OUT
S2 OUT
Y OUT
MAX GAIN
5V
GND (A)
OP2 ⊕
OP1 ⊕
OP1 ⊖
OP1 OUT
Vo
GND (A)
DET LEVEL
DET CLP
DET OUT
WINDOW (G1)
P.BLK
CLP 1
IRIS OUT
WINDOW
AGC OUT
VG
DET IN
AGCREF
AGC CONT
CCD IN

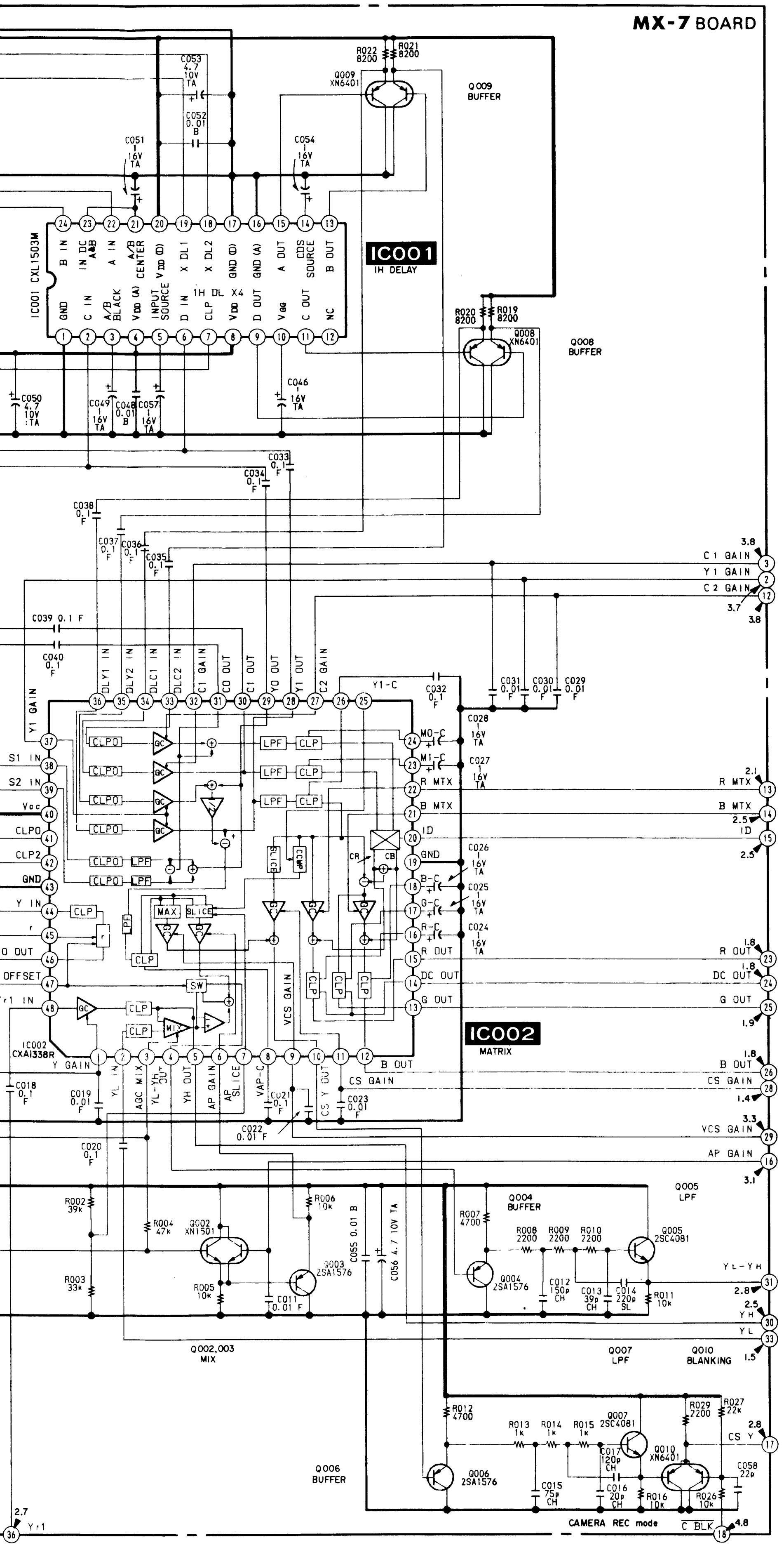
- **MX-7 BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.**


MX-7 BOARD
IC001
1H DELAY
IC001 CXL1503M
IC002
MATRIX
IC002 CXA1338R
IC003
1H DELAY
IC003 CXL1504M
Q001 BUFFER
Q002,003 MIX
Q004 BUFFER
Q005 LPF
Q006 BUFFER
Q007 LPF
Q008 BUFFER
Q009 BUFFER
Q010 BLANKING
GND
XDL2
XDL1
CLP3
Y1
Yo
CO IN
C1
CO OUT
S1 IN
S2 IN
5V
CLPO
CLP2
Y IN
Yr CGNT
GND
OFFSET
5V
Y GAIN
AGC MIX
AGC CONT
CL
YDL OUT
Yr1
C1 GAIN
Y1 GAIN
C2 GAIN
R MTX
B MTX
ID
R OUT
DC OUT
G OUT
B OUT
CS GAIN
VCS GAIN
AP GAIN
YL-YH
YH
YL
CS Y
C BLK
CAMERA REC mode

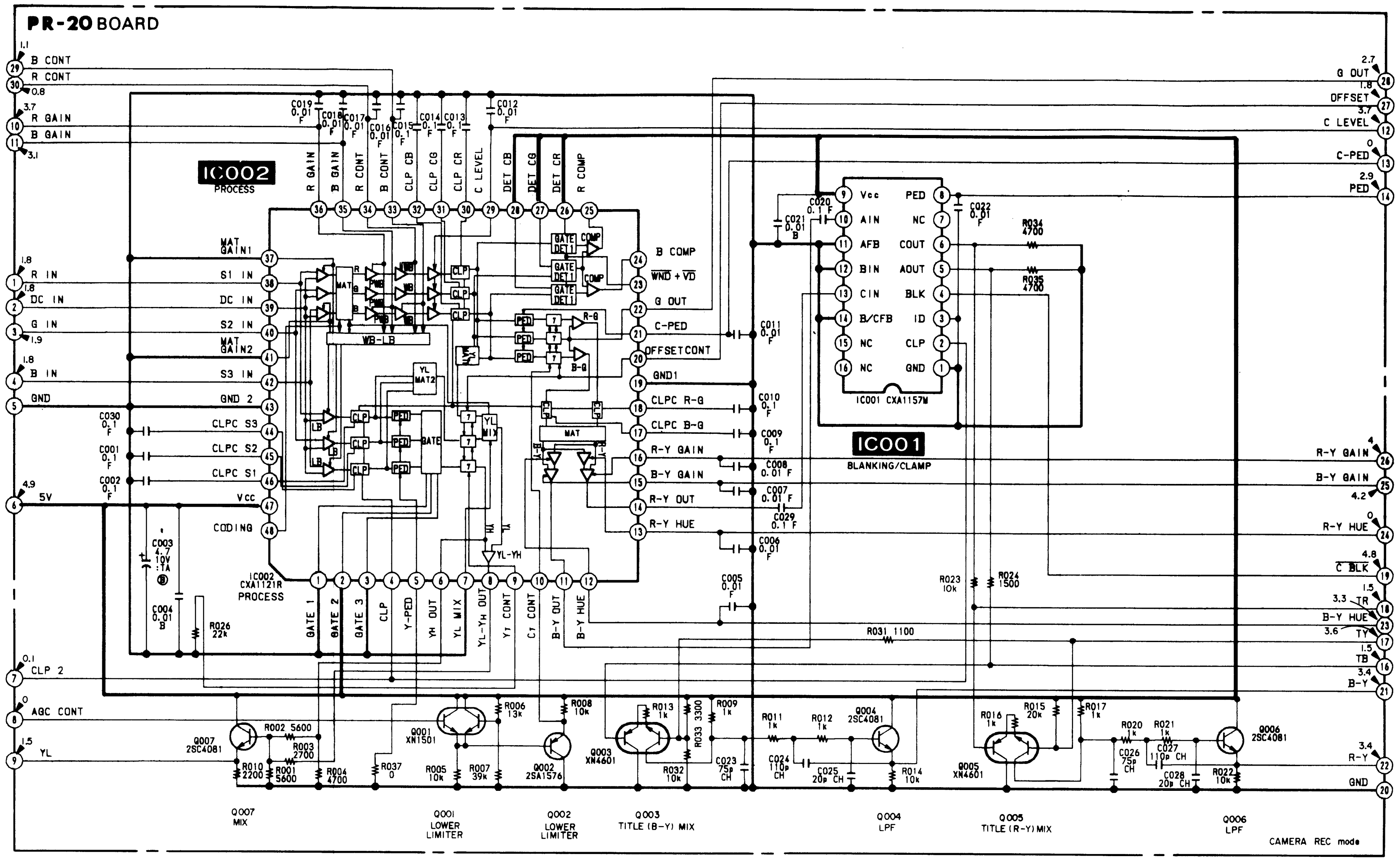
- **PR-20 BOARD is replaced as a block, so the PR**


PR-20 BOARD
IC002
PROCESS
IC002 CXA1121R PROCESS
B CONT
R CONT
R GAIN
B GAIN
R IN
DC IN
G IN
B IN
GND
5V
CLP 2
AGC CONT
YL
MAT GAIN1
S1 IN
DC IN
S2 IN
MAT GAIN2
S3 IN
GND 2
CLPC S3
CLPC S2
CLPC S1
Vcc
CODING
GATE 1
GATE 2
GATE 3
CLP
Y-PED
YH OUT
Q007 MIX
Q001 XN1501

NG BOARD of it is omitted.


MX-7 BOARD
IC001 CXL1503M
IC001
1H DELAY
Q009 XN6401
Q009 BUFFER
Q008 XN6401
Q008 BUFFER
IC002 CXA1338R
IC002
MATRIX
C1 GAIN
Y1 GAIN
C2 GAIN
R MTX
B MTX
ID
R OUT
DC OUT
G OUT
B OUT
CS GAIN
VCS GAIN
AP GAIN
YL-YH
YH
YL
CS Y
C BLK
Yr1
Q002,003 MIX
Q004 BUFFER
Q005 LPF
Q007 LPF
Q010 BLANKING
Q006 BUFFER
CAMERA REC mode

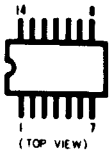
- PR-20 BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.


PR-20 BOARD
B CONT
R CONT
R GAIN
B GAIN
R IN
DC IN
G IN
B IN
GND
5V
CLP 2
AGC CONT
YL
IC002
PROCESS
IC002 CXA1121R PROCESS
IC001 CXA1157M
IC001
BLANKING/CLAMP
G OUT
OFFSET
C LEVEL
C-PED
PED
R-Y GAIN
B-Y GAIN
R-Y HUE
C BLK
TR
B-Y HUE
TY
TB
B-Y
R-Y
GND
Q007 MIX
Q001 LOWER LIMITER
Q002 LOWER LIMITER
Q003 TITLE (B-Y) MIX
Q004 LPF
Q005 TITLE (R-Y) MIX
Q006 LPF
CAMERA REC mode

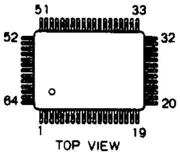
CAMERA CAMERA

4-4. SEMICONDUCTORS

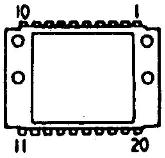
AN2512S
TC40H008F
μPD4066BG


14
8
1
7
(TOP VIEW)

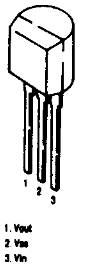
CXA1200AQ
CXA1200BQ
MB670493
μPD7503G-A80-12
μPD78112GF-509 3BE


51
33
52
32
64
20
1
19
TOP VIEW

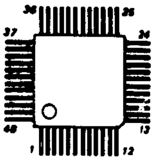
IU027CK-AK



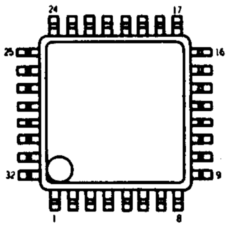
S-81350AG


1
2
3
1. Vout
2. Vss
3. Vin

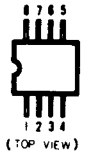
CXA1072R
CXA1202R


36
25
37
24
48
13
1
12

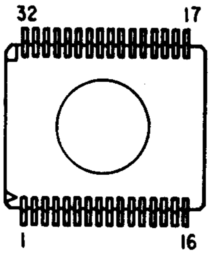
CXA1201Q


24
17
25
16
32
9
1
8

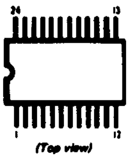
LA7293
MC34182M
NJM2233AM
NJM3414M
μPC358G2
μPC393G2


8 7 6 5
1 2 3 4
(TOP VIEW)

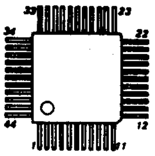
SBX1505-21



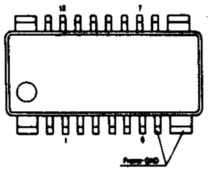
CX20114
CXA1203N


24
13
1
12
(Top view)

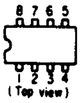
CXA1204Q
μPD7507HG-532-22


33
23
34
22
44
12
1
11

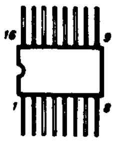
LB1631M


16
7
1
8
Power GND

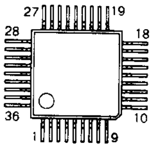
μPC311G2


8 7 6 5
1 2 3 4
(Top view)

CX20115A
μPD6142G-101

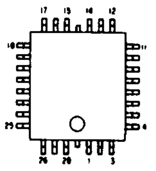


CXD1159Q

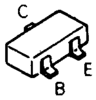

27
19
28
18
36
10
1
9

MARKINK SIDE VIEW

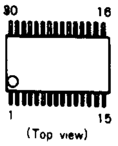
MC146805F2FPSC8253-3F


17
15
14
12
18
11
25
4
26
28
1
3

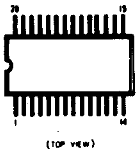
2SA812
2SA1163
2SA1226
2SA1576R
2SA1611
2SA1676
2SA1677
2SC2223-F13
2SC3396
2SC4081R
2SC4177
2SC4396
2SC4397
DTA124EU
DTA143EU
DTA144EU
DTC124EU
DTC144EU
DTC144WU



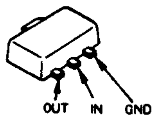
CXA1127MTP-1
CXL1502M


30
16
1
15
(Top view)

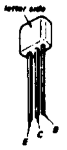
CXK58256M-15LL


28
15
1
14
(TOP VIEW)

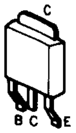
S-8054ALB-LM-S



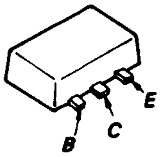
2SA1175


letter side
E
C
B

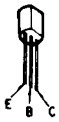
2SA1341



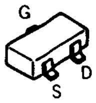
2SA1416-S-TD
2SB798
2SB1121
2SC3646-S-TD
2SD1615



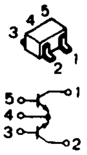
2SB926



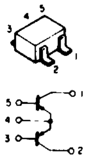
2SK94-X2
2SK160-K2
2SK300



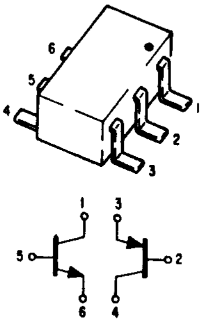
FMG2
FMW1
XN1213
XN1501


5
4
3
1
2
5
4
3
1
2

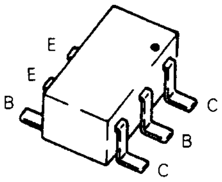
FMS1FE
XN1113


5
4
3
1
2
5
4
3
1
2

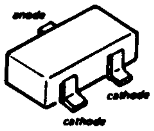
XN4601


6
5
4
1
2
3
1
3
5
2
6
4

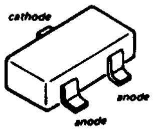
XN6401



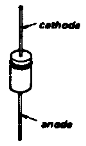
1S2835
MA152WA


anode
cathode
cathode

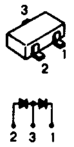
1S2837
MA141WA


cathode
anode
anode

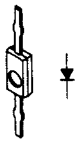
1SS119
RD2.7EB2
RD2.7ES-B2


cathode
anode

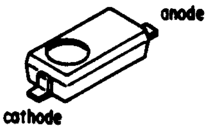
1SS123



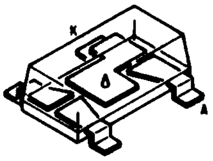
1T32



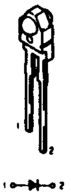
1T33C-01


anode
cathode

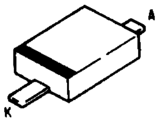
GL1HD51



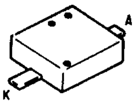
GL452S



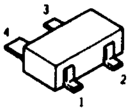
MA110



MA111

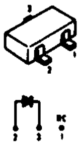


MA159

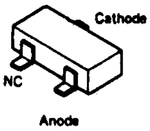


1. CATHODE
2. CATHODE
3. ANODE
4. ANODE

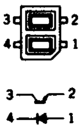
RD4.7M-B2
RD6.2M-B1
RD9.1M-B1



SB05-05-CP


Cathode
NC
Anode

TLP907-0



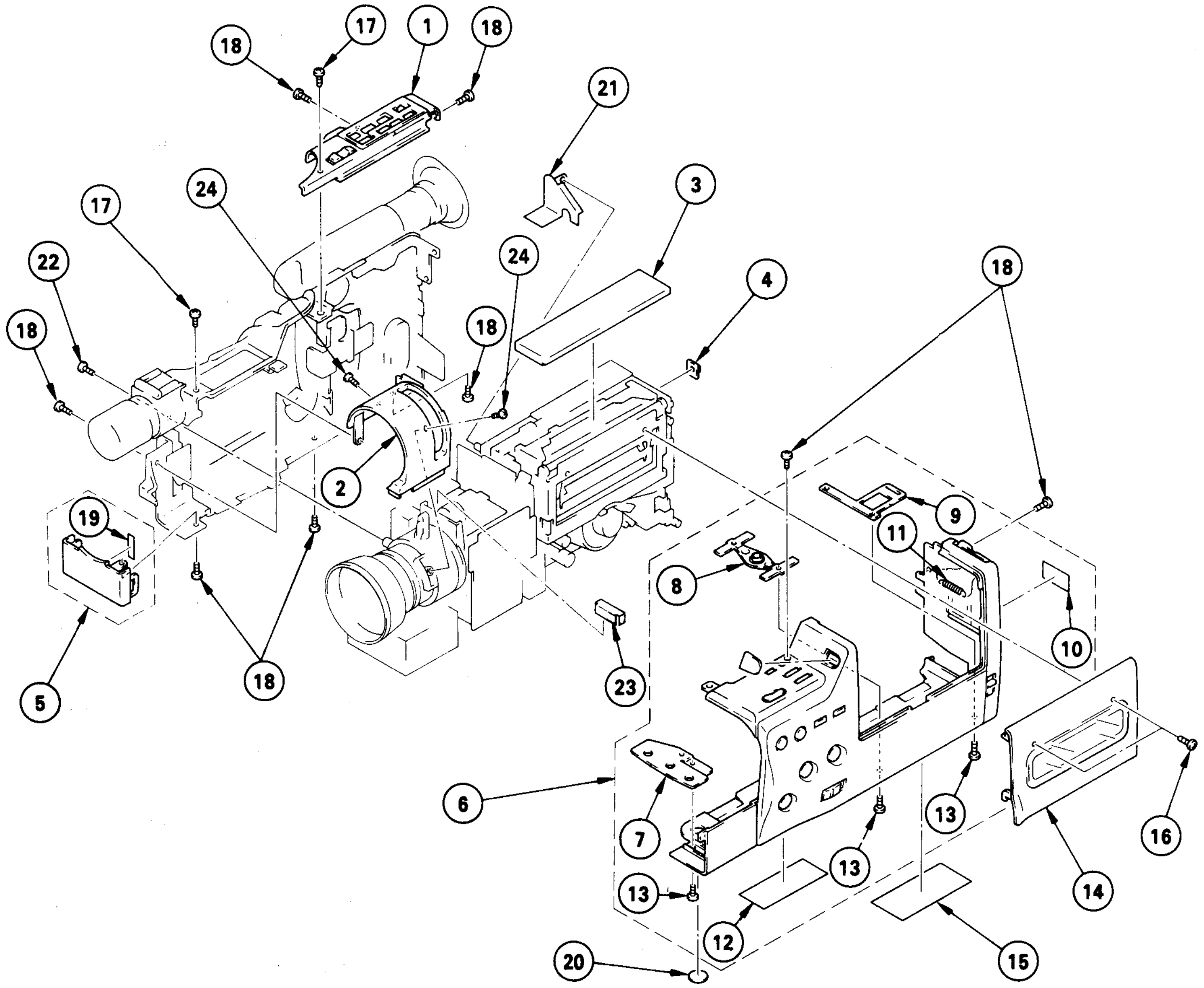
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

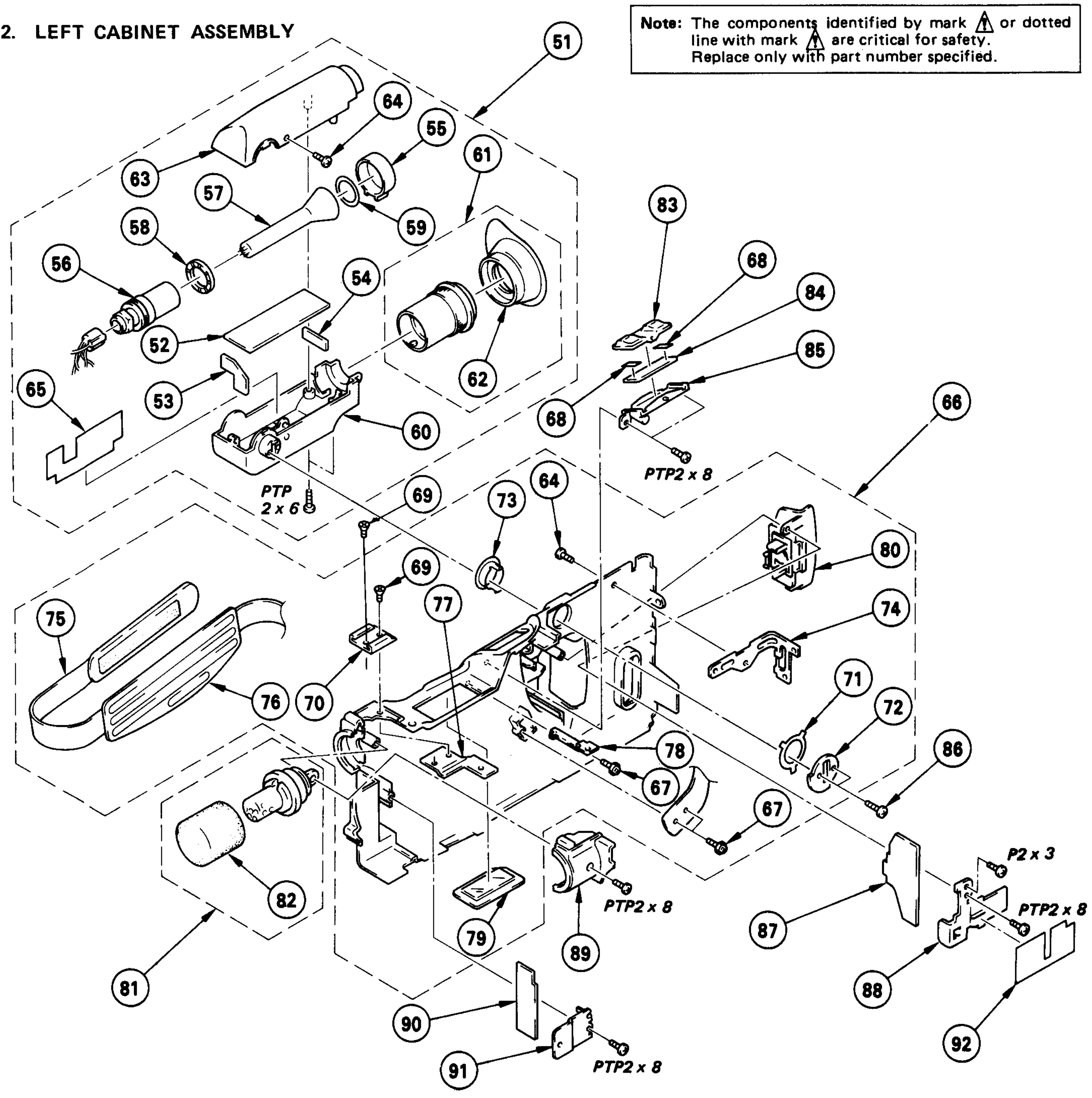
5-1. RIGHT CABINET ASSEMBLY



No.	Part No.	Description	Remark
1	X-3725-117-1	PANEL ASSY, VTR	
2	X-3724-552-1	COVER ASSY, LENS	
3	X-3725-141-1	LID ASSY, LS	
4	3-724-593-01	KEY TOP	
5	X-3724-549-1	PLATE ASSY, LIGHT TRANSMISSION	19
6	X-3725-140-1	CABINET (R) ASSY	7-13
7	*3-726-534-01	JOINT (LOWER)	
8	3-724-507-01	SCREW, TRIPOD	
9	*3-724-509-01	PLATE (LOWER), STRAP	
10	*3-719-683-01	LABEL, BATTERY FITTING	
11	3-669-440-01	SPRING, TENSION	
12	*3-704-235-01	LABEL, CAUTION (UK MODEL)	
13	3-719-381-01	SCREW (M2X4)	
14	X-3725-118-1	LID ASSY, CASSETTE	
15	*3-728-694-01	LABEL, MODEL NUMBER (AEP MODEL)	
	*3-728-679-01	LABEL, MODEL NUMBER (UK/AUS/E MODEL)	
16	3-713-791-01	SCREW (M1.7X5), TAPPING, P2	
17	3-713-786-41	SCREW (M2X8)	
18	3-719-381-01	SCREW (M2X4)	
19	*2-532-810-00	CUSHION, 15X5X0.3	
20	3-725-181-01	CAP, LOWER, AF	
21	*3-725-119-01	RETAINER, FPC	
22	3-713-790-41	SCREW (M2X10), TAPPING, P3	
23	3-728-610-03	PLATE, LIGHT INTERCEPTION	
24	3-713-791-31	SCREW (M1.7X6), TAPPING, P2	

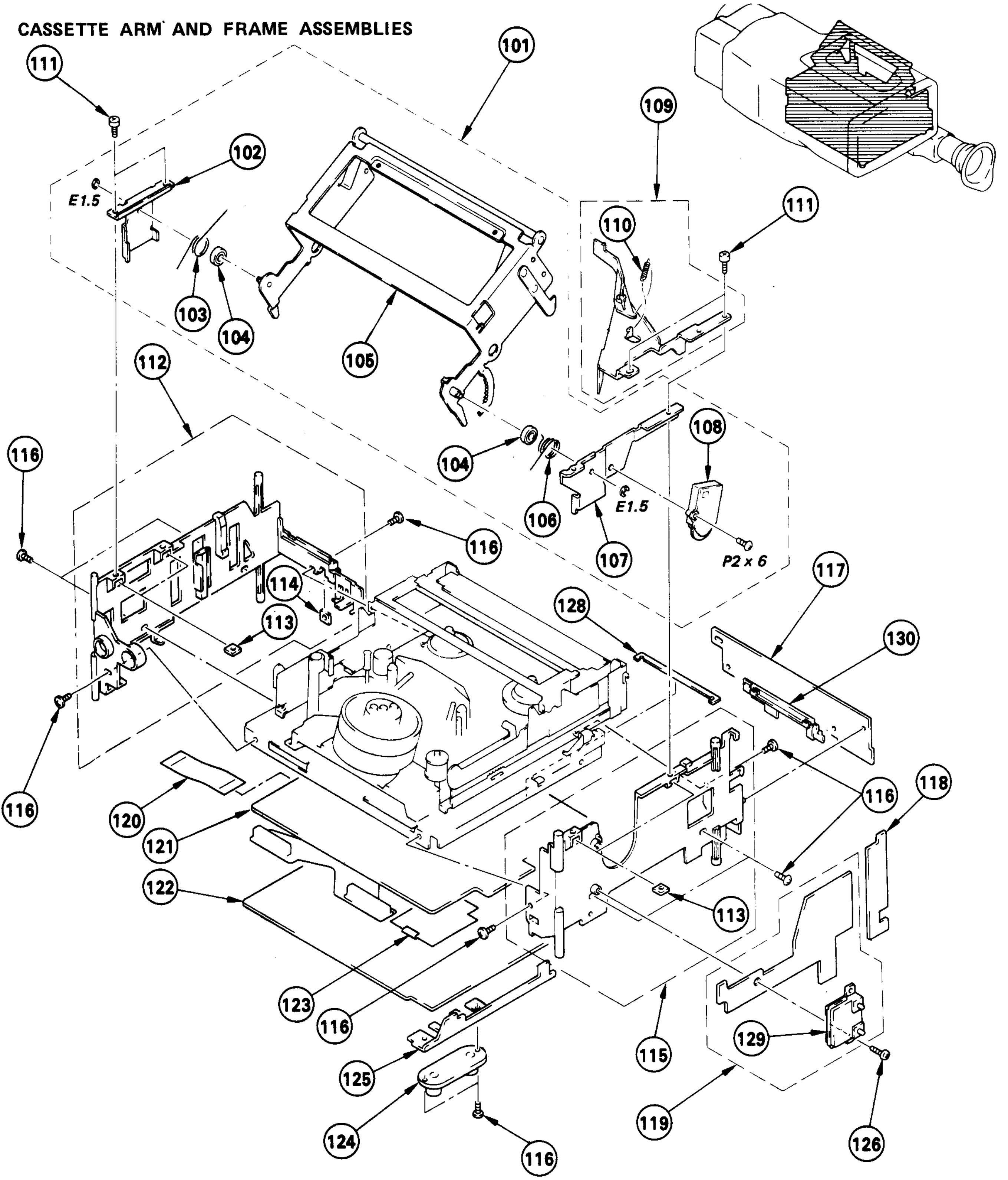
5-2. LEFT CABINET ASSEMBLY

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.



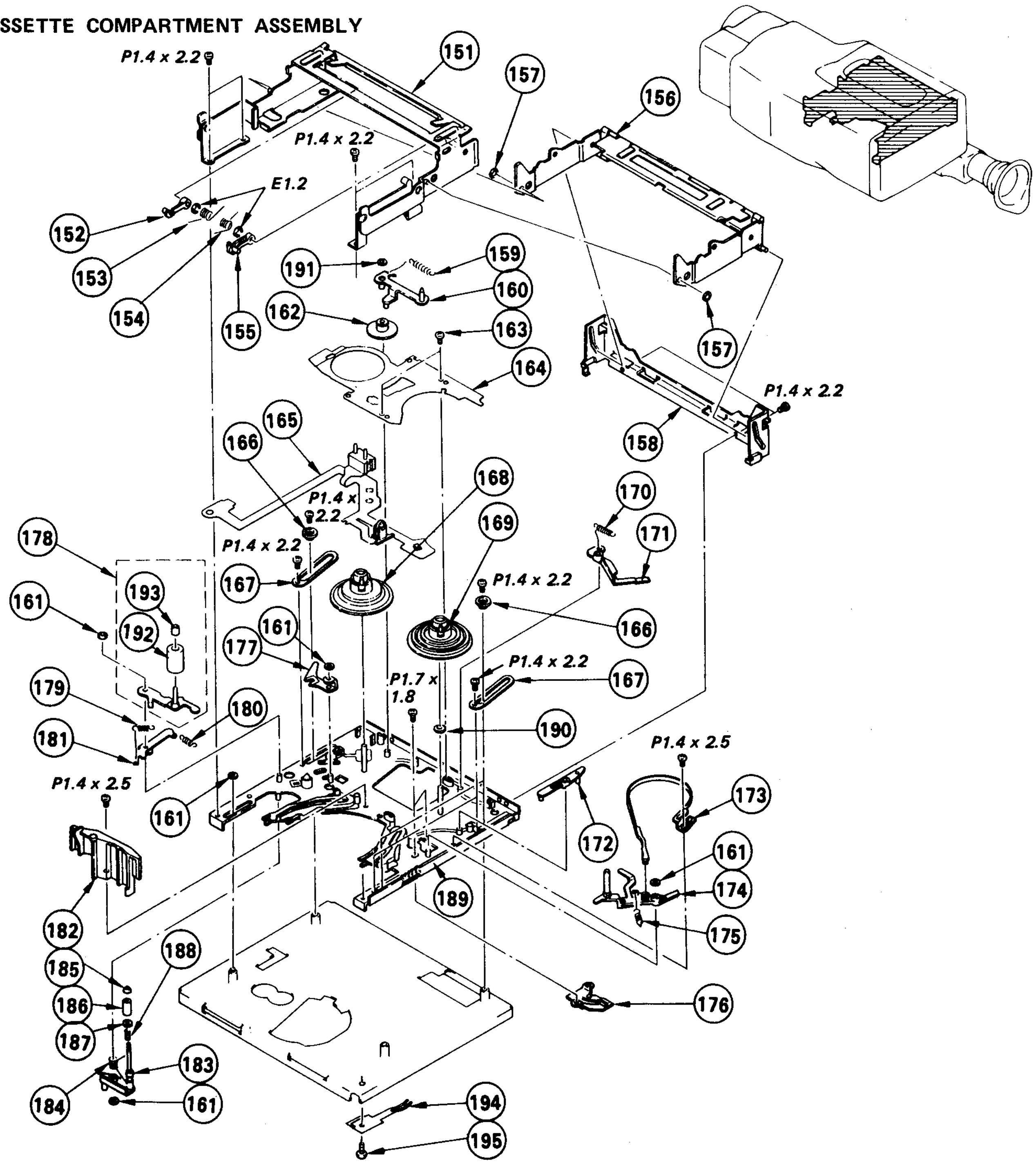
No.	Part No.	Description	Remark
51	A-7019-099-A	EVF BLOCK ASSY	52-65
52	*A-7061-236-A	VF-13 BOARD, COMPLETE	
53	*A-7070-728-A	TL-18 BOARD, COMPLETE	
54	*A-7070-729-A	TL-19 BOARD, COMPLETE	
55	X-3724-509-1	HOLDER ASSY, CRT	
56	⚠.1-451-310-21	DEFLECTION YOKE (B/W) (L951)	
57	⚠.1-546-065-11	CATHODE-RAY TUBE, B/W (MOIJVV47WB)(V901)	
58	3-724-549-01	LOCK, CRT	
59	3-724-570-01	RING, CRT FIXED	
60	A-7080-486-A	CABINET (LOWER) ASSY, EVF	
61	A-7090-807-A	HOLDER BLOCK ASSY, FINDER	62
62	3-724-544-02	EYE CUP	
63	X-3724-508-1	CABINET (UPPER) ASSY, EVF	
64	3-719-381-01	SCREW (M2X4)	
65	*3-725-156-01	INSULATOR (B), EVF	
66	A-7080-589-A	CABINET (L) BLOCK ASSY	64, 67, 69-80
67	3-669-480-21	+ PTPWH 2	
68	*2-532-810-00	CUSHION, 15X5X0.3	
69	3-713-787-01	SCREW (M2X4)	
70	3-724-511-01	SHOE, ACCESSORY	
71	3-724-512-01	SPRING	
72	3-724-513-01	PLATE, LOCK	
73	3-724-514-01	SLEEVE, EVF	
74	3-724-525-01	BRACKET (UPPER), STRAP	
75	3-724-582-01	BELT, GRIP	
76	3-724-591-01	PAD, GRIP	
77	*3-726-505-01	SHEET METAL, ACC	
78	*3-726-507-01	JOINT, DL	
79	*3-726-531-01	WINDOW, INDICATION, DDS	
80	X-3724-564-1	BASE ASSY, SP	
81	1-542-101-11	MICROPHONE (C-2020)	82
82	X-2356-712-1	WIND SCREEN ASSY	
83	3-724-526-01	BUTTON, ZOOM	
84	*A-7070-747-A	ZM-8 BOARD, COMPLETE	
85	3-724-527-01	BASE, ZOOM BUTTON	
86	3-713-792-01	SCREW (M2X10)	
87	A-7070-748-A	SW-92 BOARD, COMPLETE	
88	*3-724-569-01	SHEET METAL, SP	
89	3-725-178-01	HOUSING, MICROPHONE	
90	*A-7061-344-A	MC-24 BOARD, COMPLETE	
91	3-726-508-01	SHEET METAL, MC	
92	*3-725-153-01	SHEET, INSULATING, SHEET METAL	

5-3. CASSETTE ARM AND FRAME ASSEMBLIES


111
101
102
E1.5
109
111
110
103
104
105
112
104
108
116
E1.5
106
107
P2 x 6
116
117
114
128
113
130
116
118
116
120
121
113
122
123
116
115
129
125
124
119
126
116

No.	Part No.	Description	Remark
101	A-7040-141-A	ARM BLOCK ASSY (3), CASSETTE	102-108
102	*3-719-606-01	PLATE (T2) (M), SIDE	
103	3-695-582-01	SPRING, TORSION	
104	3-695-512-02	COLLAR, CASSETTE ARM	
105	X-3712-034-4	ARM ASSY (2), CASSETTE	
106	3-695-581-01	SPRING, TORSION	
107	3-695-641-01	PLATE (S2), SIDE	
108	3-681-528-11	DAMPER	
109	A-7040-140-B	GUARD BLOCK ASSY, TAPE	110
110	3-695-718-01	SPRING, TENSION	
111	3-719-697-01	SCREW (M1.7X5), SPECIAL HEAD	
112	*X-3724-503-1	FRAME (F) ASSY, MD	113, 114
113	3-716-418-01	NUT, FRAME PLATE	
114	3-718-233-01	NUT, PLATE	
115	*X-3724-504-1	FRAME (R) ASSY, MD	113
116	3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD	
117	*A-7070-733-A	FV-1 BOARD, COMPLETE	
118	*A-7070-744-A	EJ-4 BOARD, COMPLETE	
119	*A-7070-734-A	PA-13 BOARD, COMPLETE	129
120	1-574-083-11	CABLE, FLAT (1.0MM PITCH) 15P	
121	*A-7061-299-A	SS-86 BOARD, COMPLETE	128
122	*A-7061-298-A	VA-41 BOARD, COMPLETE	
123	*3-726-558-01	PLATE, SHIELD, VA-SS	
124	1-537-142-11	TERMINAL BOARD (AV OUT) (J361)	
125	*X-3724-577-1	REINFORCEMENT (B) ASSY, VA	
126	3-719-601-01	SCREW (B2X5), TAPPING	
128	*3-725-136-01	REINFORCEMENT, VA-SS	
129	1-535-658-11	TERMINAL BOARD	
130	3-724-537-01	HOLDER, FV PC BOARD	

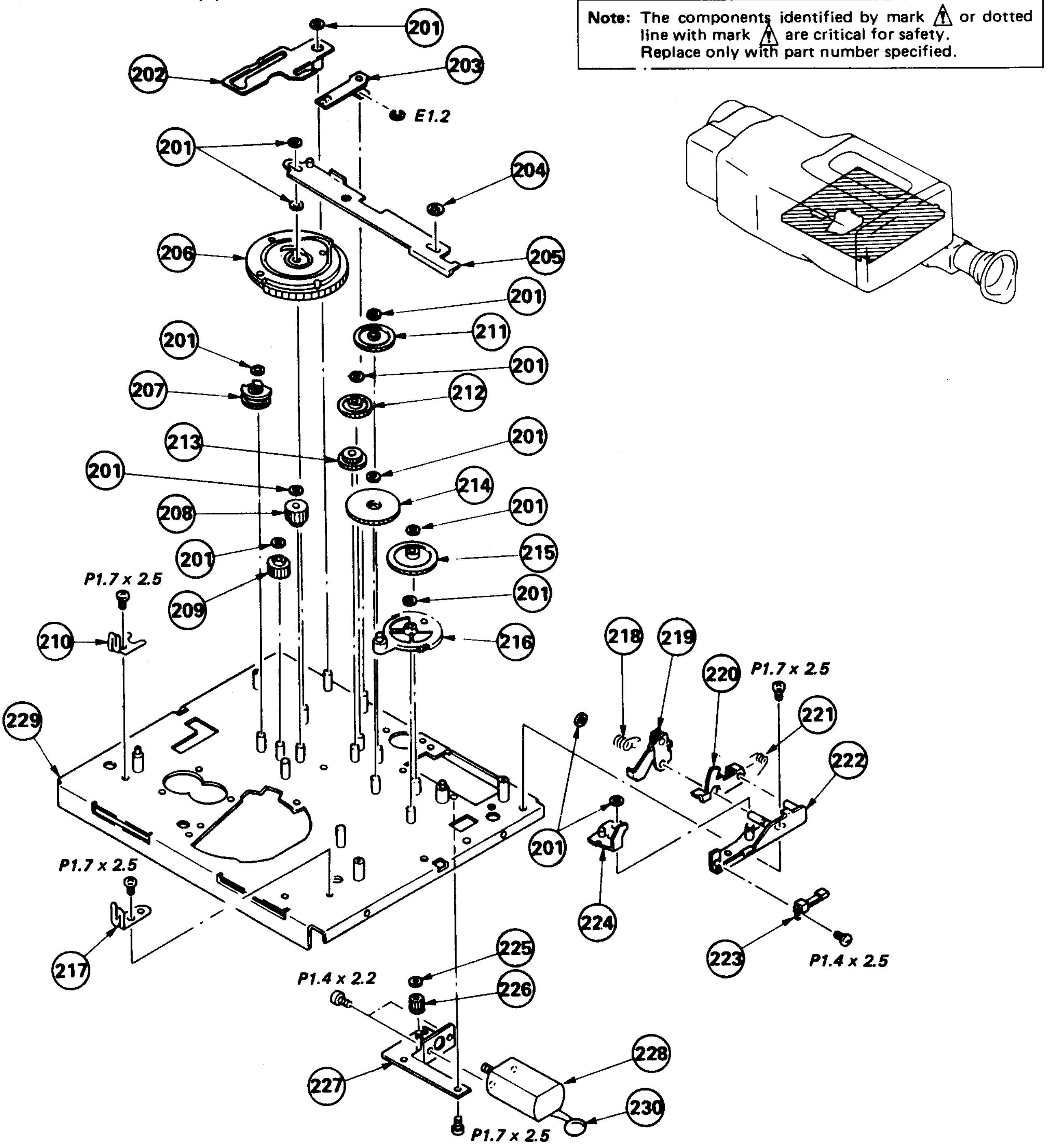
5-4. LS CASSETTE COMPARTMENT ASSEMBLY


P1.4 x 2.2
151
157
156
P1.4 x 2.2
E1.2
152
153
154
155
191
159
160
162
163
157
164
P1.4 x 2.2
158
165
166
168
P1.4 x 2.2
169
170
171
178
P1.4 x 2.2
167
P1.4 x 2.2
161
193
192
166
161
177
P1.4 x 2.2
167
P1.7 x 1.8
179
180
190
181
P1.4 x 2.5
P1.4 x 2.5
161
172
173
161
174
189
182
175
188
185
176
186
187
183
184
161
194
195

No.	Part No.	Description	Remark
151	X-3695-447-6	COMPARTMENT ASSY, CASSETTE, LS	
152	3-695-595-01	RETAINER (T), CASSETTE	
153	3-695-605-01	SPRING, TORSION	
154	3-695-604-01	SPRING, TORSION	
155	3-695-594-01	RETAINER (S), CASSETTE	
156	X-3695-448-3	ARM ASSY, BLIND	
157	3-669-465-00	WASHER (1.5), STOPPER	
158	3-695-646-01	ARM, LS	
159	3-695-718-01	SPRING, TENSION	
160	X-3712-037-1	LEVER (A) ASSY (2)	
161	3-315-384-31	WASHER, STOPPER	
162	X-3712-025-1	GEAR ASSY, TS	
163	3-699-402-01	SCREW (M1.3X5.5), TAPPING	
164	3-712-165-01	PLATE (2), STOPPER	
165	A-7060-693-A	FP-53 BOARD, COMPLETE	
166	3-695-698-01	GUIDE, LS	
167	3-695-697-01	SPRING, LEAF, LS	
168	X-3695-436-1	TABLE ASSY, REEL, TAKE-UP	
169	X-3712-038-1	TABLE ASSY (2), REEL, SUPPLY	190
170	3-542-475-00	SPRING, TENSION	
171	3-712-151-01	BRAKE (2), SOFT	
172	3-695-735-04	ARM, TG1 RELEASE	
173	X-3695-432-1	BAND ASSY, TG1	
174	X-3712-019-1	ARM ASSY (2), TG1	
175	3-695-591-01	SPRING, TENSION	
176	3-695-733-01	PLATE, CAM, LS	
177	X-3712-022-1	ARM (B) ASSY (2), PINCH	
178	X-3712-032-2	ARM (C) ASSY (2), PINCH	192, 193
179	3-695-622-01	SPRING, TENSION	
180	3-695-719-01	SPRING, TENSION	
181	X-3695-415-1	PINCH LEVER ASSY	
182	3-695-624-01	BASE, PROTECT	
183	X-3712-027-1	ARM ASSY (2), TG7	
184	3-695-541-01	SPRING	
185	3-712-158-01	FLANGE, UPPER, TG7	
186	3-712-160-01	SLEEVE (2), TG7	
187	3-712-159-01	FLANGE, LOWER, TG7	
188	3-712-157-01	SPRING, COMPRESSION	
189	X-3713-962-1	CHASSIS ASSY (2), LS	
190	3-701-444-01	WASHER, 6	
191	3-321-393-01	WASHER, STOPPER	
192	X-3695-416-1	PINCH ROLLER ASSY	
193	3-695-569-01	SLEEVE (P), PINCH INNER	
194	*3-725-151-01	PLATE, GROUND, RP	
195	3-719-695-21	SCREW (M1.7X2.5), SPECIAL HEAD	

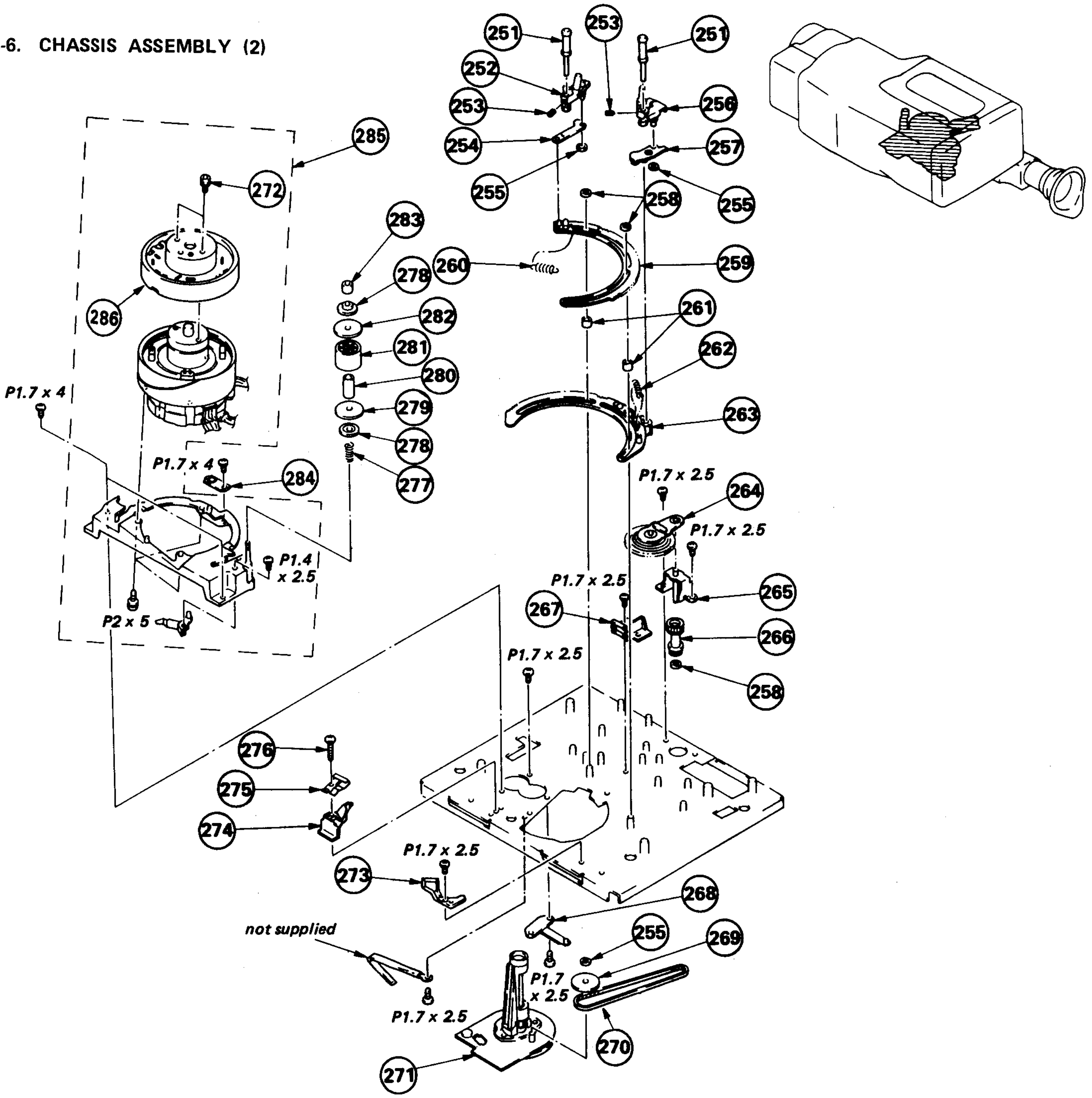
5-5. CHASSIS ASSEMBLY (1)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.


201
202
203
E1.2
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
P1.7 x 2.5
P1.7 x 2.5
P1.7 x 2.5
P1.7 x 2.5
P1.4 x 2.2
P1.4 x 2.5

No.	Part No.	Description	Remark
201	3-315-384-31	WASHER, STOPPER	
202	X-3712-023-1	ARM (A) ASSY (2), PINCH	
203	3-695-589-01	LEVER (B), REEL LOCK	
204	3-669-465-00	WASHER (1.5), STOPPER	
205	X-3695-439-4	SLIDER ASSY, M	
206	X-3712-031-1	CAM ASSY (2)	
207	3-712-156-01	GEAR (M) (2), THREADING	
208	3-695-537-01	GEAR (T), THREADING	
209	3-695-536-01	GEAR (S), THREADING	
210	3-695-706-01	SPRING (T)	
211	3-695-559-01	GEAR (B), THREADING	
212	3-695-724-01	GEAR (D), THREADING	
213	3-712-162-02	GEAR (C) (2), THREADING	
214	3-695-714-01	GEAR (A), LS	
215	3-695-563-04	GEAR (B), LS	
216	X-3695-417-1	GEAR (C) ASSY, LS	
217	3-695-705-01	SPRING (S)	
218	3-713-937-01	SPRING (A) (2)	
219	X-3695-418-1	ARM ASSY, LOCK	
220	3-695-574-01	ARM, RETURN PREVENTION	
221	3-695-579-01	SPRING (B), TORSION	
222	X-3712-018-1	BASE ASSY (2), LOCK	
223	1-553-226-00	SWITCH, LEAF (CASSETTE DOWN) (S902)	
224	X-3695-438-1	ARM ASSY, EJECT	
225	3-321-393-01	WASHER, STOPPER	
226	3-712-150-01	WHEEL, WORM	
227	X-3712-017-1	HOLDER ASSY, MOTOR	
228	⚠1-541-508-11	MOTOR, DC (LA14-323F) (LOADING) (M903)	
229	X-3712-036-1	CHASSIS ASSY (2), MECHANICAL	
230	1-161-032-00	CAP, CERAMIC 0.01MF (C901)	

5-6. CHASSIS ASSEMBLY (2)

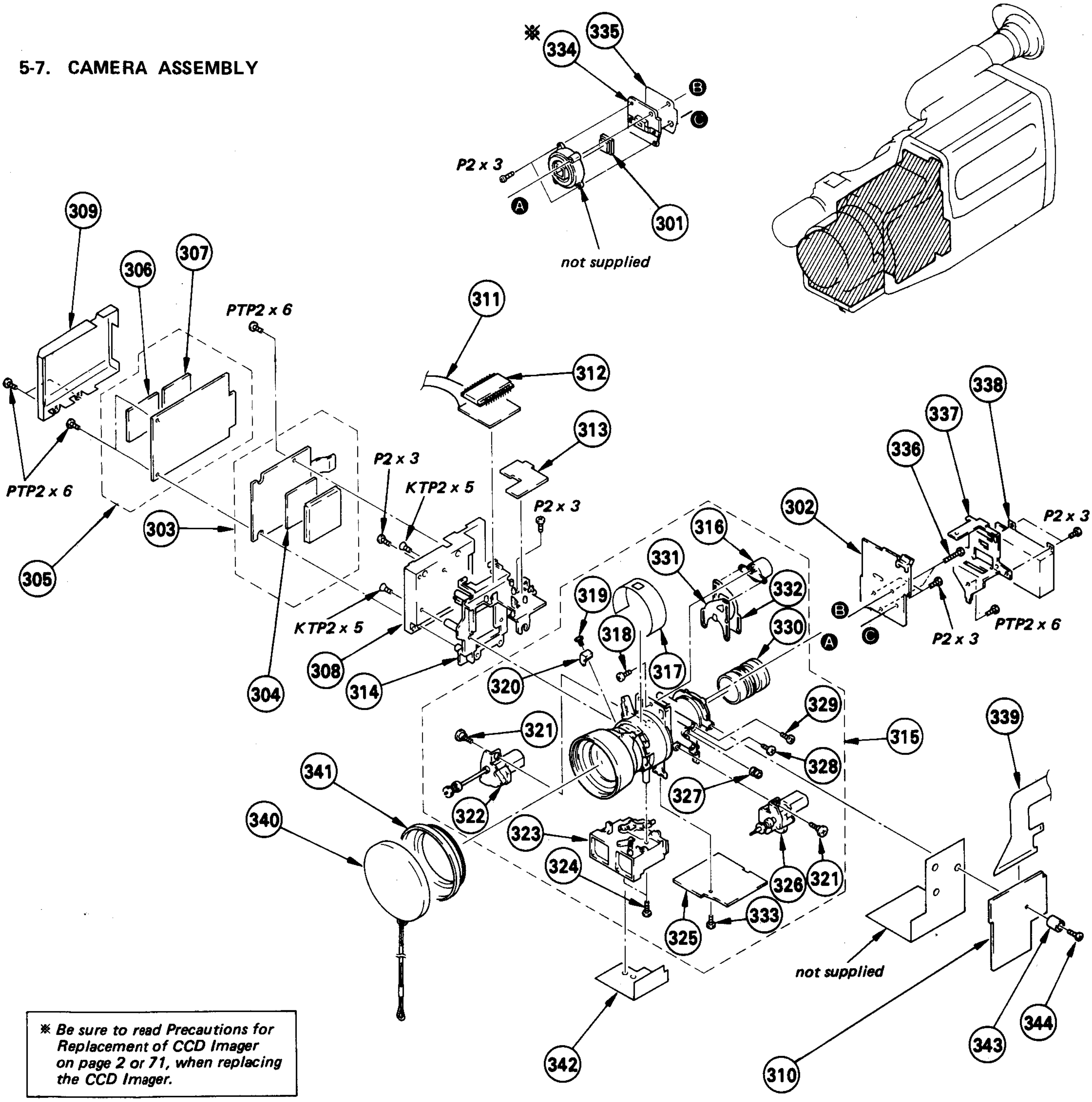

251
253
251
252
253
256
254
257
255
255
285
272
283
258
255
278
260
259
282
286
281
261
280
262
P1.7 x 4
279
263
278
P1.7 x 4
284
277
P1.7 x 2.5
264
P1.7 x 2.5
P1.4
x 2.5
P1.7 x 2.5
265
267
P2 x 5
266
P1.7 x 2.5
258
276
275
274
P1.7 x 2.5
273
268
not supplied
255
269
P1.7
x 2.5
P1.7 x 2.5
270
271

No.	Part No.	Description	Remark
251	X-3712-029-1	ROLLER ASSY (2), GUIDE	
252	X-3712-030-1	BASE ASSY (2), TG5	
253	3-695-770-01	SCREW, GR LOCK	
254	3-695-545-01	JOINT, T	
255	3-321-393-01	WASHER, STOPPER	
256	X-3712-028-1	BASE ASSY (2), TG4	
257	X-3695-429-1	JOINT ASSY, S	
258	3-315-384-31	WASHER, STOPPER	
259	X-3695-414-1	SLIDER (T) ASSY, THREADING	
260	3-695-773-01	SPRING, TENSION	
261	3-695-544-01	ROLLER, GUIDE	
262	3-695-772-01	SPRING, TENSION	
263	X-3695-428-1	SLIDER (S) ASSY, THREADING	
264	X-3712-024-1	ARM ASSY (2), GEAR	
265	X-3712-020-1	BASE ASSY (2), MIDWAY PULLEY	
266	X-3712-021-1	PULLEY ASSY (2), MIDWAY	
267	3-712-163-01	SUPPORT (2), SLIDER	
268	1-535-574-11	TERMINAL, SHAFT GROUND	

No.	Part No.	Description	Remark
269	X-3695-413-1	GEAR ASSY, CHANGE	
270	3-695-637-01	BELT, RELAY	
271	8-835-309-01	MOTOR, DC BHF-3301C (CAPSTAN) (M902)	
272	3-686-403-01	SCREW (2X5), BOLT WASHER	
273	3-695-627-01	STOPPER, SLIDER, S	
274	3-695-628-01	STOPPER, SLIDER, T	
275	3-695-677-01	SPRING (T), LEAF	
276	3-695-519-01	SCREW, FITTING, LEAF SPRING(T)	
277	3-695-532-01	SPRING, COMPRESSION	
278	3-695-727-01	RETAINER, FLANGE, UPPER	
279	3-695-794-01	FLANGE, LOWER, TG2	
280	3-695-530-01	SLEEVE, TG2	
281	3-712-164-01	ROLLER (2), TG2	
282	3-695-528-01	FLANGE, TG2	
283	3-695-529-01	NUT, TG2	
284	1-807-238-11	SENSOR, DEW CONDENSATION	
285	⚠A-7048-177-A	DRUM ASSY (DGU-27B-R)	272, 286
286	A-7049-143-A	DRUM ASSY, UPPER (DGR-27-R)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-7. CAMERA ASSEMBLY


※
334
335
B
C
P2 x 3
A
301
not supplied
309
306
307
PTP2 x 6
311
312
313
338
337
336
302
P2 x 3
P2 x 3
KTP2 x 5
P2 x 3
PTP2 x 6
303
305
304
KTP2 x 5
308
314
316
331
332
319
318
330
317
320
B
C
A
P2 x 3
PTP2 x 6
329
339
315
321
328
341
327
322
340
323
324
326
321
325
333
not supplied
342
343
344
310

※ *Be sure to read Precautions for Replacement of CCD Imager on page 2 or 71, when replacing the CCD Imager.*

No.	Part No.	Description	Remark
301	A-7090-879-A	KIT, FILTER, OPTICAL	
302	*A-7061-294-A	VC-38 BOARD, COMPLETE	
303	*A-7061-295-A	VC-39 BOARD, COMPLETE	304
304	A-7068-127-A	DT-71 (HIC) BOARD, COMPLETE	
305	*A-7061-296-A	VC-40 BOARD, COMPLETE	306, 307
306	A-7068-128-A	MX-7 (HIC) BOARD, COMPLETE	
307	A-7068-129-A	PR-20 (HIC) BOARD, COMPLETE	
308	*X-3724-550-1	CASE (A) ASSY, SHIELD, VC	
309	*X-3724-551-1	CASE (B) ASSY, SHIELD, VC	
310	*A-7061-343-A	FC-16 BOARD, COMPLETE	311, 312
311	1-626-232-11	FP-123 FLEXIBLE BOARD (19P)	
312	1-808-385-11	L.C.D	
313	*A-7070-743-A	FD-6 BOARD, COMPLETE	
314	3-725-179-01	FRAME, CAMERA	
315	1-547-284-11	LENSE, ZOOM (VCL-906XB)	316-333
316	3-707-442-01	METER, IG (IRIS) (M904)	
317	3-707-443-01	SHEET, ZOOM	
318	3-707-444-01	SCREW, IG METER CLAMP	
319	3-707-445-01	SCREW, (N) STOPPER CLAMP	
320	3-707-446-01	STOPPER, (N)	
321	3-707-447-01	SCREW, MOTOR CLAMP	
322	3-707-448-01	MOTOR UNIT, AF (M905)	
323	3-707-449-01	BLOCK UNIT, AF	
324	3-707-450-01	SCREW, AF BLOCK CLAMP	
325	3-707-451-01	PC BOARD UNIT, AF	
326	3-707-452-01	MOTOR UNIT, ZOOM (M906)	
327	3-707-453-01	ROLLER, ECCECTRIC	
328	3-707-454-01	SCREW	
329	3-707-455-01	SCREW, RELAY SET	
330	3-707-456-01	MIRROR TUBE UNIT, RELAY	
331	3-707-457-01	(B) ASSY, IRIS FEATHER	
332	3-707-458-01	FEATHER, IRIS (A)	
333	3-707-459-01	SCREW, AF PC BOARD CLAMP	
334	A-7090-878-A	CCD ASSY (CCD IMAGER)	
335	*3-725-180-01	SHEET, INSULATING, CCD HOLDER	
336	3-713-790-51	SCREW (M2X16), TAPPING, P3	
337	3-725-182-01	JOINT	
338	1-464-993-12	CONVERTER, DC-DC	
339	1-626-233-11	FP-124 FLEXIBLE BOARD	
340	A-7090-806-A	CAP ASSY, HOOD	
341	3-724-589-01	HOOD, LENZ	
342	3-726-533-01	COVER, AF	
343	*3-725-184-01	RETAINER, FC	
344	3-719-601-01	SCREW (B2X5), TAPPING	

FP-53 **VF-13**

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- SEMICONDUCTORS
  In each case, U: μ, for example:
  UA. . . : μA. . . , UPA. . . : μPA. . . ,
  UPB. . . : μPB. . . , UPC. . . : μPC. . . ,
  UPD. . . : μPD. . .
- CAPACITORS
  MF: μF, PF: μμF
- COILS
  MMH: mH, UH: μH

Ref.No	Part No.	Description	Remark
	A-7060-693-A	FP-53 BOARD, COMPLETE (Ref.No. ********************** 4,000 Series)	
	3-713-904-01	HOLDER (2), LED	
		DIODE	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-801-55	DIODE TLP907-0	
D304	8-719-801-55	DIODE TLP907-0	
		SWITCH	
S301	1-570-869-11	SWITCH, PUSH (2 KEY)	

****

Ref.No	Part No.	Description	Remark
	*A-7061-236-A	VF-13 BOARD, COMPLETE (Ref.No. ********************** 6,000 Series)	
	1-526-978-21	SOCKET ASSY, CRT	
	3-713-535-01	CUSHION, CRT	
	*3-725-155-01	INSULATOR, FB	
		CAPACITOR	
C901	1-126-369-11	ELECT 220MF 20% 6.3V	
C902	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C904	1-127-486-00	ELECT(SOLID) 47MF 20% 6.3V	
C905	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C906	1-163-115-00	CERAMIC CHIP 82PF 5% 50V	
C907	⚠.1-162-625-11	CERAMIC CHIP 0.0047MF 5% 50V	
C908	⚠.1-163-015-00	CERAMIC CHIP 0.0033MF 10% 50V	
C909	1-126-193-11	ELECT 1MF 20% 50V	
C911	1-131-388-00	TANTALUM 68MF 10% 3.15V	
C912	1-102-038-00	CERAMIC 0.001MF 99% 500V	
C913	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C915	1-126-193-11	ELECT 1MF 20% 50V	
C916	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C917	1-135-166-21	TANTAL. CHIP 47MF 20% 6.3V	
C918	1-162-638-11	CERAMIC CHIP 1MF 16V	
C919	1-135-070-00	TANTAL. CHIP 0.1MF 10% 35V	
C920	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
		CONNECTOR	
CN901	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P	
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
		CONPOSITION CIRCUIT BLOCK	
CP901	1-238-119-11	RES, ADJ	
		DIODE	
D903	8-719-400-20	DIODE MA152WA	
		IC	
IC901	8-759-420-01	IC AN2512S	
		COIL	
L901	1-408-421-00	INDUCTOR 100UH	
L902	1-410-379-21	INDUCTOR CHIP 6.8UH	
L903	⚠.1-459-858-11	COIL, FERRITE (HLC)	
		TRANSISTOR	
Q903	8-729-106-64	TRANSISTOR 2SD1615	
Q904	8-729-216-32	TRANSISTOR 2SA1163G	
		RESISTOR	
R902	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R907	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R908	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R909	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R911	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R912	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R913	1-216-123-11	METAL GLAZE 1.2M 5% 1/10W	
R914	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R915	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R916	1-216-125-00	METAL GLAZE 1.5M 5% 1/10W	
R917	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R919	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R920	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R921	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R922	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R923	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R924	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R925	1-216-336-11	METAL GLAZE 47K 1% 1/10W	
R926	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
R928	1-216-870-11	METAL GLAZE 180K 1% 1/10W	
R929	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R930	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R931	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
		VARIABLE RESISTOR	
RV901	1-230-203-00	RES, ADJ, METAL GLAZE 2.2M	
		TRANSFORMER	
T901	⚠.1-439-428-11	TRANSFORMER ASSY, FLYBACK	
		THERMISTOR	
TH901	1-807-938-11	THERMISTOR	

****

Ref.No	Part No.	Description	Remark
	*A-7070-728-A	TL-18 BOARD, COMPLETE ***********************	(Ref.No. 6,000Series)
		DIODE	
D950	8-719-941-34	DIODE GL1HD51	
		RESISTOR	
R950	1-216-037-00	METAL GLAZE 330 5% 1/10W	
**			
	*A-7070-729-A	TL-19 BOARD, COMPLETE ***********************	(Ref.No. 6,000Series)
		DIODE	
D955	8-719-941-34	DIODE GL1HD51	
**			
	*A-7061-294-A	VC-38 BOARD, COMPLETE ***********************	(Ref.No. 1,000Series)
	3-724-530-01	HOLDER, WB SENSOR	
		CAPACITOR	
C600	1-135-092-21	TANTAL. CHIP 3.3MF 20% 16V	
C601	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C602	1-135-092-21	TANTAL. CHIP 3.3MF 20% 16V	
C603	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C604	1-135-079-21	TANTAL. CHIP 3.3MF 20% 25V	
C605	1-126-196-11	ELECT 3.3MF 20% 50V	
C606	1-124-248-00	ELECT 22MF 20% 35V	
C607	1-163-036-00	CERAMIC CHIP 0.068MF 50V	
C608	1-163-036-00	CERAMIC CHIP 0.068MF 50V	
C609	1-164-005-11	CERAMIC CHIP 0.47MF 25V	
C610	1-126-205-11	ELECT 47MF 20% 6.3V	
C611	1-162-638-11	CERAMIC CHIP 1MF 16V	
C850	1-130-467-00	MYLAR 470PF 5% 50V	
C851	1-130-481-00	MYLAR 0.0068MF 5% 50V	
C852	1-135-155-21	TANTAL. CHIP 4.7MF 20% 10V	
C853	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C854	1-124-779-00	ELECT 10MF 20% 16V	
C855	1-162-638-11	CERAMIC CHIP 1MF 16V	
C856	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C857	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C858	1-124-779-00	ELECT 10MF 20% 16V	
		CONNECTOR	
CN600	*1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P	
CN601	*1-565-542-21	PIN, CONNECTOR (PC BOARD) 3P	
CN850	*1-566-183-21	PIN, CONNECTOR (PC BOARD) 4P	
CN851	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	

Ref.No	Part No.	Description	Remark
		DIODE	
D600	8-719-404-35	DIODE MA141WA	
D601	8-719-404-46	DIODE MA110	
D850	8-719-801-45	DIODE 1SS187	
		IC	
IC600	A-7090-878-A	CCD ASSY (CCD IMAGER)	
IC850	8-759-030-27	IC MC34182MR	
IC851	8-759-106-23	IC UPD4066BG	
IC852	8-759-012-75	IC MC146805F2FPSC82533F	
IC853	8-759-100-93	IC UPC393G2	
		COIL	
L600	1-412-032-21	INDUCTOR CHIP 100UH	
L850	1-412-031-11	INDUCTOR CHIP 47UH	
		TRANSISTOR	
Q600	8-729-105-53	TRANSISTOR 2SK300	
Q601	8-729-402-13	TRANSISTOR XN1501	
Q602	8-729-905-35	TRANSISTOR 2SC4081R	
Q850	8-729-403-06	TRANSISTOR XN1113	
Q851	8-729-403-06	TRANSISTOR XN1113	
Q852	8-729-805-69	TRANSISTOR 2SA1341	
Q855	8-729-403-07	TRANSISTOR XN1213	
Q856	8-729-403-07	TRANSISTOR XN1213	
Q868	8-729-805-45	TRANSISTOR 2SC3395	
Q869	8-729-403-07	TRANSISTOR XN1213	
		RESISTOR	
R600	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R601	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R602	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R603	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R604	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R605	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
R606	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R607	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R608	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R609	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R610	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R611	1-216-042-00	METAL GLAZE 510 5% 1/10W	
R613	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R850	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R851	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R852	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R853	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R855	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R856	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R857	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R858	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R860	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R861	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R862	1-216-073-00	METAL GLAZE 10K 5% 1/10W	

When indicating parts by reference number, please include the board name.

VC-38 VC-39

Ref.No	Part No.	Description			Remark
R863	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R864	1-216-107-00	METAL GLAZE	270K	5%	1/10W
R865	1-216-099-00	METAL GLAZE	120K	5%	1/10W
R866	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R867	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R868	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R869	1-216-115-00	METAL GLAZE	560K	5%	1/10W
R870	1-216-107-00	METAL GLAZE	270K	5%	1/10W
R871	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R872	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R873	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R882	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R883	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R884	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R885	1-216-085-00	METAL GLAZE	33K	5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV600	1-230-873-11	RES, ADJ, METAL GLAZE 47K
RV850	1-230-870-11	RES, ADJ, METAL GLAZE 10K

BALANCE SENSOR

Ref.No	Part No.	Description
SB850	1-807-684-11	SENSOR, WHITE BALANCE

CRYSTAL

Ref.No	Part No.	Description
X850	1-567-152-00	OSCILLATOR, CERAMIC

****

*A-7061-295-A VC-39 BOARD, COMPLETE (Ref.No. 1,000 Series)
****

A-7068-127-A DT-71 BOARD, COMPLETE (HIC)

CAPACITOR

Ref.No	Part No.	Description			Remark
C620	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C621	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C622	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C623	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C624	1-162-637-11	CERAMIC CHIP	0.47MF		16V
C625	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C626	1-126-205-11	ELECT	47MF	20%	6.3V
C629	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C630	1-126-204-11	ELECT	47MF	20%	16V
C631	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C632	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C633	1-126-204-11	ELECT	47MF	20%	16V
C634	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C635	1-124-778-00	ELECT	22MF	20%	6.3V
C636	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C637	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C638	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C639	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C641	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C642	1-135-089-21	TANTAL. CHIP	6.8MF	20%	20V
C643	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C644	1-126-204-11	ELECT	47MF	20%	16V
C645	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C646	1-124-778-00	ELECT	22MF	20%	6.3V
C647	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C648	1-126-202-21	ELECT	22MF	20%	35V
C649	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C650	1-135-079-21	TANTAL. CHIP	3.3MF	20%	35V
C651	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C652	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C653	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C654	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C655	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C656	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C658	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C659	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C660	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C661	1-126-199-11	ELECT	6.8MF	20%	35V
C662	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C663	1-126-199-11	ELECT	6.8MF	20%	35V
C664	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C665	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C666	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C667	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C668	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C669	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C670	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C671	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C672	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C673	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C675	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C676	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C677	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C678	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C679	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C680	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C681	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C682	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C683	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C684	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C687	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V

CONNECTOR

Ref.No	Part No.	Description
CN620	1-566-428-11	PIN, CONNECTOR 4P
CN622	*1-506-743-11	PIN, CONNECTOR 5P
CN623	*1-566-181-11	PIN, CONNECTOR (PC BOARD) 2P

TRIMMER

Ref.No	Part No.	Description
CT620	1-141-331-11	CAP, VAR, TRIMMER (CHIP)

DIODE

Ref.No	Part No.	Description
D623	8-719-404-49	DIODE MA111

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
D624	8-719-404-49	DIODE MA111	
D625	8-713-220-00	DIODE 1T32	
D626	8-719-404-49	DIODE MA111	
		IC	
IC620	8-759-701-24	IC NJM3414M	
IC621	8-752-326-08	IC CXD1159Q	
		COIL	
L621	1-412-034-21	INDUCTOR CHIP 330UH	
L622	1-412-029-11	INDUCTOR CHIP 10UH	
L623	1-412-029-11	INDUCTOR CHIP 10UH	
L624	1-412-034-21	INDUCTOR CHIP 330UH	
L625	1-412-032-21	INDUCTOR CHIP 100UH	
L626	1-410-204-31	INDUCTOR CHIP 10UH	
L627	1-410-204-31	INDUCTOR CHIP 10UH	
L628	1-410-192-51	INDUCTOR CHIP 1UH	
L629	1-410-180-51	INDUCTOR CHIP 0.1UH	
L630	1-410-180-51	INDUCTOR CHIP 0.1UH	
L631	1-410-180-51	INDUCTOR CHIP 0.1UH	
L632	1-410-192-51	INDUCTOR CHIP 1UH	
		TRANSISTOR	
Q621	8-729-402-84	TRANSISTOR XN4601	
Q622	8-729-402-84	TRANSISTOR XN4601	
Q623	8-729-402-84	TRANSISTOR XN4601	
Q624	8-729-403-07	TRANSISTOR XN1213	
Q625	8-729-809-88	TRANSISTOR 2SA1416-S	
Q626	8-729-810-01	TRANSISTOR 2SC3646-S	
Q627	8-729-402-84	TRANSISTOR XN4601	
Q628	8-729-116-05	TRANSISTOR 2SK160-K5	
Q629	8-729-905-23	TRANSISTOR 2SA1576R	
Q630	8-729-402-84	TRANSISTOR XN4601	
		RESISTOR	
R621	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R622	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R624	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R625	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R626	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R627	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R629	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R630	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R633	1-216-044-00	METAL GLAZE 620 5% 1/10W	
R634	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R635	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R636	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R637	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R638	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R640	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R641	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R642	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R643	1-216-084-00	METAL GLAZE 30K 5% 1/10W	

Ref.No	Part No.	Description	Remark
R644	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R645	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R647	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R648	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R649	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R650	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R651	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R652	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R653	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R654	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R655	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R656	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R657	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R658	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R660	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R661	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R662	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R663	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R666	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R667	1-216-005-00	METAL GLAZE 15 5% 1/10W	
R668	1-216-005-00	METAL GLAZE 15 5% 1/10W	
R669	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R670	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R671	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R672	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R674	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R675	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R678	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R679	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R680	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R681	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R683	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R684	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R685	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R687	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R688	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R689	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R690	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R691	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R692	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R694	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R695	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R696	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R697	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
		VARIABLE RESISTOR	
RV620	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV621	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV622	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
		FLAT CABLE	
W620	1-574-082-11	CABLE, FLAT (1.0MM PITCH) 15P	
W621	1-559-927-11	CABLE, FLAT (1.0MM PITCH) 33P	

When indicating parts by reference number, please include the board name.

CRYSTAL

Ref.No	Part No.	Description		Remark
X620	1-577-119-11	OSCILLATOR, CRYSTAL		
X621	1-567-733-11	VIBRATOR, CRYSTAL		

****

*A-7061-296-A VC-40 BOARD, COMPLETE (Ref.No.
********************** 1,000Series)

A-7068-128-A MX-7 BOARD, COMPLETE (HIC)

A-7068-129-A PR-20 BOARD, COMPLETE (HIC)

CAPACITOR

Ref.No	Part No.	Description		Remark
C701	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C702	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C703	1-124-778-00	ELECT 22MF	20%	6.3V
C704	1-124-778-00	ELECT 22MF	20%	6.3V
C705	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C706	1-126-206-11	ELECT 100MF	20%	6.3V
C707	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C710	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C711	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C712	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C713	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C714	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C715	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C716	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C717	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C718	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C719	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C720	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C721	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C722	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C723	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C724	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C725	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C726	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C727	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C728	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C729	1-126-198-11	ELECT 4.7MF	20%	35V
C730	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C731	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C732	1-124-566-11	ELECT 120MF	20%	6.3V
C733	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C734	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C736	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C737	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C738	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C739	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C740	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C741	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C742	1-124-778-00	ELECT 22MF	20%	6.3V
C743	1-124-778-00	ELECT 22MF	20%	6.3V
C744	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C745	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C746	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C747	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C748	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C749	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C750	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C752	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C753	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C754	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C755	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C756	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C757	1-163-101-00	CERAMIC CHIP 22PF	5%	50V

CONNECTOR

Ref.No	Part No.	Description		Remark
CN701	*1-566-183-11	PIN, CONNECTOR (PC BOARD) 4P		
CN702	*1-566-183-21	PIN, CONNECTOR (PC BOARD) 4P		
CN703	*1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P		
CN704	*1-565-532-11	PIN, CONNECTOR (PC BOARD) 7P		
CN705	*1-566-187-11	PIN, CONNECTOR (PC BOARD) 8P		

DIODE

Ref.No	Part No.	Description		Remark
D701	8-719-404-46	DIODE MA110		

FILTER

Ref.No	Part No.	Description		Remark
FL701	1-236-266-11	FILTER, LOW PASS (YH)		
FL702	1-236-267-11	FILTER, LOW PASS (YDL)		
FL704	1-236-192-11	FILTER, LOW PASS		
FL705	1-236-196-11	LPF		
FL706	1-415-554-21	DELAY LINE, LC		
FL707	1-236-265-11	FILTER, BAND PASS		

IC

Ref.No	Part No.	Description		Remark
IC701	8-752-033-34	IC CXA1072R		

COIL

Ref.No	Part No.	Description		Remark
L701	1-412-031-11	INDUCTOR CHIP 47UH		
L702	1-412-031-11	INDUCTOR CHIP 47UH		
L703	1-410-204-31	INDUCTOR CHIP 10UH		
L704	1-410-657-21	INDUCTOR CHIP 180UH		

TRANSISTOR

Ref.No	Part No.	Description		Remark
Q701	8-729-905-23	TRANSISTOR 2SA1576R		
Q702	8-729-905-35	TRANSISTOR 2SC4081R		
Q705	8-729-905-23	TRANSISTOR 2SA1576R		
Q706	8-729-905-35	TRANSISTOR 2SC4081R		
Q707	8-729-905-23	TRANSISTOR 2SA1576R		
Q708	8-729-905-35	TRANSISTOR 2SC4081R		
Q709	8-729-402-78	TRANSISTOR XN6401		
Q710	8-729-905-23	TRANSISTOR 2SA1576R		
Q711	8-729-905-35	TRANSISTOR 2SC4081R		

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		RESISTOR	
R701	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R702	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R703	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R704	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R705	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R706	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R707	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R708	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R709	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R710	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R711	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R712	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R713	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R714	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R715	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R716	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R717	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R718	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R725	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R726	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R727	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R728	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R729	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R730	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R731	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R732	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R733	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R734	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R735	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R736	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R737	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R738	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R739	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R740	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R741	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R742	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R743	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R744	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R747	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R748	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R749	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R750	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R751	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R752	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R753	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R754	1-216-082-00	METAL GLAZE 24K 5% 1/10W	
R755	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R756	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R757	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R758	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R759	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R760	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R761	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R763	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R764	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R765	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R766	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R767	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R768	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R769	1-216-076-00	METAL GLAZE 13K 5% 1/10W	
R770	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R771	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R773	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R774	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R776	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R777	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R778	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R779	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R780	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R781	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R782	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R783	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R786	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R787	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R788	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R789	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R790	1-216-072-00	METAL GLAZE 9.1K 5% 1/10W	
R791	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R792	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R793	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R794	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R795	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R796	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R797	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R798	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R799	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R801	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R802	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R805	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R806	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R809	1-216-298-00	METAL GLAZE 2.2 5% 1/10W	
R810	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R811	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R812	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R813	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R814	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R815	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R816	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R819	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R820	1-216-031-00	METAL GLAZE 180 5% 1/10W	
		VARIABLE RESISTOR	
RV701	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV705	1-230-873-11	RES, ADJ, METAL GLAZE 47K	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
RV706	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV707	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV708	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV709	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV710	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV711	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV712	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV713	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV714	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV715	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV716	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV717	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV718	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV719	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV720	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV721	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV722	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV724	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	

****

*A-7061-299-A SS-86 BOARD, COMPLETE (Ref.No. 2,000Series)
****

*3-718-223-01 HOLDER, TE
*3-725-136-01 REINFORCEMENT, VA-SS

CAPACITOR

Ref.No	Part No.	Description			Remark
C001	1-126-204-11	ELECT	47MF	20%	16V
C002	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C003	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C004	1-126-198-11	ELECT	4.7MF	20%	35V
C006	1-124-779-00	ELECT	10MF	20%	16V
C007	1-124-779-00	ELECT	10MF	20%	16V
C008	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C009	1-126-206-11	ELECT	100MF	20%	6.3V
C010	1-162-638-11	CERAMIC CHIP	1MF		16V
C011	1-162-638-11	CERAMIC CHIP	1MF		16V
C012	1-124-778-00	ELECT	22MF	20%	6.3V
C014	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C015	1-163-034-00	CERAMIC CHIP	0.033MF		50V
C017	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C051	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C052	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C053	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C054	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C055	1-124-577-11	ELECT	82MF	20%	10V
C056	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C057	1-124-577-11	ELECT	82MF	20%	10V
C058	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C059	1-124-577-11	ELECT	82MF	20%	10V
C060	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C061	1-126-204-11	ELECT	47MF	20%	16V
C062	1-162-638-11	CERAMIC CHIP	1MF		16V

Ref.No	Part No.	Description			Remark
C063	1-135-099-00	TANTAL. CHIP	2.2MF	20%	6.3V
C064	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C065	1-127-506-00	ELECT(SOLID)	1MF	20%	25V
C066	1-162-638-11	CERAMIC CHIP	1MF		16V
C067	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C068	1-126-196-11	ELECT	3.3MF	20%	50V
C069	1-124-779-00	ELECT	10MF	20%	16V
C070	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C071	1-124-779-00	ELECT	10MF	20%	16V
C072	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C073	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C074	1-124-779-00	ELECT	10MF	20%	16V
C075	1-124-779-00	ELECT	10MF	20%	16V
C076	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C080	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C081	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C082	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C083	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C084	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C085	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C086	1-136-017-00	CERAMIC CHIP	0.0047MF		50V
C087	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C088	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C089	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C200	1-124-779-00	ELECT	10MF	20%	16V
C201	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C202	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C204	1-124-779-00	ELECT	10MF	20%	16V
C205	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C206	1-124-779-00	ELECT	10MF	20%	16V
C207	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C209	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C210	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C211	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C212	1-124-779-00	ELECT	10MF	20%	16V
C213	1-124-778-00	ELECT	22MF	20%	6.3V
C215	1-135-145-11	TANTAL. CHIP	0.47MF	20%	25V
C216	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C217	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C218	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V
C301	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C302	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C303	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C304	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C305	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C306	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C308	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C309	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C310	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C311	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C312	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C313	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C314	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C315	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C316	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C317	1-124-778-00	ELECT 22MF 20% 6.3V	
C318	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C319	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
C320	1-124-778-00	ELECT 22MF 20% 6.3V	
C321	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C322	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C323	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C324	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C325	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V	
C326	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C327	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C328	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C329	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C330	1-124-778-00	ELECT 22MF 20% 6.3V	
C332	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C333	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C334	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C335	1-124-778-00	ELECT 22MF 20% 6.3V	
C336	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C337	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C338	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C339	1-124-778-00	ELECT 22MF 20% 6.3V	
C340	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C341	1-124-779-00	ELECT 10MF 20% 16V	
C342	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C343	1-124-778-00	ELECT 22MF 20% 6.3V	
C344	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C345	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C346	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C347	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C348	1-124-778-00	ELECT 22MF 20% 6.3V	
C349	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C350	1-163-123-00	CERAMIC CHIP 180PF 5% 50V	
C351	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C353	1-124-778-00	ELECT 22MF 20% 6.3V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN001	*1-564-014-00	PIN, CONNECTOR 4P	
CN002	*1-564-014-00	PIN, CONNECTOR 4P	
CN003	1-566-529-11	CONNECTOR, FPC (ZIF) 13P	
CN004	*1-566-540-11	CONNECTOR, FPC (NON ZIF) 8P	
CN005	*1-565-532-11	PIN, CONNECTOR (PC BOARD) 7P	
CN006	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	
CN007	1-566-536-11	CONNECTOR, FPC (ZIF) 20P	

TRIMMER

Ref.No	Part No.	Description	Remark
CT200	1-141-368-11	CAP, CHIP TRIMMER	

DIODE

Ref.No	Part No.	Description	Remark
D003	8-719-404-12	DIODE MA159	
D004	8-719-404-12	DIODE MA159	
D050	8-719-938-75	DIODE SB05-05CP	
D051	8-719-938-75	DIODE SB05-05CP	
D200	8-719-100-03	DIODE 1S2835	
D201	8-719-404-12	DIODE MA159	
D203	8-713-300-88	DIODE 1T33C-01	
D399	8-719-109-60	DIODE RD2.7ES-B2	

IC

Ref.No	Part No.	Description	Remark
IC001	8-759-141-79	IC UPD78112GF-509-3BE	
IC002	8-759-100-94	IC UPC358G2	
IC003	8-759-804-72	IC LB1631M	
IC004	8-759-202-45	IC CX20114	
IC005	8-759-940-79	IC S-81350AG	
IC006	8-759-107-68	IC CX20115A	
IC007	8-759-805-06	IC CXA1127M	
IC200	8-759-141-56	IC UPD7507HG-532-22	
IC201	8-759-944-88	IC CXK58256MF-15LL	
IC202	8-759-972-39	IC MB670493	
IC203	8-759-101-12	IC UPC311G2	
IC301	8-752-033-84	IC CXA1202R	

COIL

Ref.No	Part No.	Description	Remark
L001	1-410-381-11	INDUCTOR CHIP 10UH	
L002	1-410-381-11	INDUCTOR CHIP 10UH	
L050	1-421-983-11	COIL, CHOKE 700UH	
L051	1-421-983-11	COIL, CHOKE 700UH	
L052	1-410-627-11	COIL, CHOKE 100UH	
L053	1-410-389-11	INDUCTOR CHIP 47UH	
L200	1-410-377-11	INDUCTOR CHIP 4.7UH	
L201	1-410-377-11	INDUCTOR CHIP 4.7UH	
L202	1-410-377-11	INDUCTOR CHIP 4.7UH	
L203	1-410-377-11	INDUCTOR CHIP 4.7UH	
L204	1-410-384-11	INDUCTOR CHIP 18UH	
L301	1-408-777-00	INDUCTOR CHIP 10UH	
L302	1-408-793-21	INDUCTOR CHIP 220UH	
L303	1-412-029-11	INDUCTOR CHIP 10UH	
L304	1-410-385-11	INDUCTOR CHIP 22UH	
L305	1-410-732-21	INDUCTOR CHIP 0.18UH	
L306	1-410-383-11	INDUCTOR CHIP 15UH	
L307	1-412-033-11	INDUCTOR CHIP 220UH	
L308	1-412-033-11	INDUCTOR CHIP 220UH	

PHOTO TRANSISTOR

Ref.No	Part No.	Description	Remark
PH001	8-729-920-77	PHOTO TRANSISTOR PT480FS	
PH002	8-729-920-77	PHOTO TRANSISTOR PT480FS	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q001	8-729-808-18	TRANSISTOR 2SB926	
Q002	8-729-117-32	TRANSISTOR 2SC4177	
Q005	8-729-903-10	TRANSISTOR FMW1	
Q006	8-729-903-10	TRANSISTOR FMW1	
Q007	8-729-905-45	TRANSISTOR DTA143EU	

When indicating parts by reference number, please include the board name.

SS-86

Ref.No	Part No.	Description	Remark
Q008	8-729-117-16	TRANSISTOR 2SA1611-6	
Q051	8-729-805-25	TRANSISTOR 2SB1121	
Q052	8-729-805-25	TRANSISTOR 2SB1121	
Q053	8-729-904-07	TRANSISTOR FMG2	
Q054	8-729-117-16	TRANSISTOR 2SA1611-6	
Q055	8-729-810-19	TRANSISTOR 2SC4396	
Q070	8-729-903-97	TRANSISTOR FMS1FE	
Q071	8-729-904-07	TRANSISTOR FMG2	
Q073	8-729-905-45	TRANSISTOR DTA143EU	
Q074	8-729-810-19	TRANSISTOR 2SC4396	
Q075	8-729-810-10	TRANSISTOR 2SA1676	
Q076	8-729-810-19	TRANSISTOR 2SC4396	
Q078	8-729-810-10	TRANSISTOR 2SA1676	
Q079	8-729-810-13	TRANSISTOR 2SA1677	
Q080	8-729-805-25	TRANSISTOR 2SB1121	
Q081	8-729-805-25	TRANSISTOR 2SB1121	
Q201	8-729-117-16	TRANSISTOR 2SA1611-6	
Q202	8-729-117-32	TRANSISTOR 2SC4177	
Q203	8-729-810-19	TRANSISTOR 2SC4396	
Q204	8-729-810-19	TRANSISTOR 2SC4396	
Q205	8-729-810-19	TRANSISTOR 2SC4396	
Q206	8-729-810-19	TRANSISTOR 2SC4396	
Q302	8-729-117-54	TRANSISTOR 2SA1175	
Q303	8-729-100-76	TRANSISTOR 2SA812	
Q304	8-729-810-10	TRANSISTOR 2SA1676	
Q305	8-729-810-10	TRANSISTOR 2SA1676	
Q307	8-729-810-19	TRANSISTOR 2SC4396	
Q308	8-729-810-25	TRANSISTOR 2SC4397	
Q309	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q310	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q311	8-729-117-32	TRANSISTOR 2SC4177	
Q312	8-729-117-32	TRANSISTOR 2SC4177	
Q313	8-729-117-32	TRANSISTOR 2SC4177	
Q314	8-729-810-19	TRANSISTOR 2SC4396	
Q315	8-729-810-13	TRANSISTOR 2SA1677	
Q316	8-729-810-10	TRANSISTOR 2SA1676	
Q317	8-729-117-32	TRANSISTOR 2SC4177	
Q318	8-729-117-32	TRANSISTOR 2SC4177	
Q319	8-729-810-10	TRANSISTOR 2SA1676	
Q320	8-729-117-32	TRANSISTOR 2SC4177	
Q321	8-729-810-19	TRANSISTOR 2SC4396	

RESISTOR

Ref.No	Part No.	Description				Remark
R001	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R002	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R003	1-216-186-00	METAL GLAZE	330	5%	1/8W	
R004	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R005	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R006	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R007	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R009	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R010	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R011	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R012	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R013	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R014	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R015	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R016	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R017	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R018	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R019	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R020	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R021	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R022	1-216-172-00	METAL GLAZE	82	5%	1/8W	
R025	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R026	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R027	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R028	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R029	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R030	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R031	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R032	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R033	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R034	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R038	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R040	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R041	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R045	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R050	1-249-413-11	CARBON	470	5%	1/4W	
R051	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R052	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R053	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
R054	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
R055	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
R056	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R057	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R058	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R059	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R060	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R061	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R062	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R063	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R064	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R065	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R066	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R067	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R068	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R069	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R070	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R071	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R072	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R073	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R074	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R075	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R076	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R077	1-216-097-00	METAL GLAZE	100K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R078	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R079	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R080	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R081	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R082	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R083	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R084	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R085	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R086	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R087	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R090	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R091	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R092	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R093	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R094	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R095	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R096	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R097	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R098	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R100	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R101	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R102	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R103	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R104	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R108	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R109	1-216-136-00	METAL GLAZE	2.7	5%	1/8W	
R110	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R111	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R112	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R200	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R201	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R202	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R203	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R204	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R205	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R206	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R207	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R208	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R209	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R210	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R211	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R212	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R213	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R214	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R215	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R216	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R217	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R229	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R230	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R231	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R233	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R235	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R236	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R237	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R238	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R240	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R241	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R242	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R243	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R244	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R245	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R246	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R247	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R248	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R249	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R304	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R305	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R306	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R307	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R308	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R309	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R311	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R312	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R313	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R314	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R315	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R316	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R318	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R319	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R320	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R323	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R324	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R325	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R326	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R327	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R328	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R329	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R331	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R332	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R334	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R335	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R336	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R337	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R338	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R339	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R340	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R341	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R342	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R343	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R344	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R345	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R346	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R347	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R348	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R349	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R350	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R351	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R352	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R353	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R354	1-216-027-00	METAL GLAZE 120 5% 1/10W	
R355	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R356	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R357	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R358	1-216-041-00	METAL GLAZE 470 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV001	1-123-873-11	RES, ADJ, METAL GLAZE 47K	
RV002	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV200	1-230-867-11	RES, ADJ, METAL GLAZE 1K	
RV301	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV302	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV306	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X001	1-567-885-11	VIBRATOR, CRYSTAL 12MHz	
X200	1-567-152-00	OSCILLATOR, CERAMIC 4MHz	

****

*A-7061-298-A VA-41 BOARD, COMPLETE (Ref.No. 3,000Series)
****

CAPACITOR

Ref.No	Part No.	Description	Remark
C251	1-162-638-11	CERAMIC CHIP 1MF	16V
C252	1-162-638-11	CERAMIC CHIP 1MF	16V
C253	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C254	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C255	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C256	1-124-778-00	ELECT 22MF 20%	6.3V
C257	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C258	1-124-778-00	ELECT 22MF 20%	6.3V
C259	1-162-638-11	CERAMIC CHIP 1MF	16V
C260	1-163-141-00	CERAMIC CHIP 0.001MF 10%	50V
C261	1-163-141-00	CERAMIC CHIP 0.001MF 10%	50V
C262	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C263	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C264	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C265	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C266	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C267	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C268	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C269	1-163-017-00	CERAMIC CHIP 0.0047MF 10%	50V
C270	1-163-015-00	CERAMIC CHIP 0.0033MF 10%	50V
C271	1-163-137-00	CERAMIC CHIP 680PF 5%	50V
C272	1-162-638-11	CERAMIC CHIP 1MF	16V
C273	1-163-135-00	CERAMIC CHIP 560PF 5%	50V
C274	1-163-141-00	CERAMIC CHIP 0.001MF 10%	50V
C275	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
C276	1-163-145-00	CERAMIC CHIP 0.0015MF 10%	50V
C277	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C278	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C280	1-124-279-11	ELECT 3.3MF 20%	25V
C360	1-162-638-11	CERAMIC CHIP 1MF	16V
C361	1-163-077-00	CERAMIC CHIP 0.1MF 10%	25V
C362	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C363	1-126-199-11	ELECT 6.8MF 20%	35V
C364	1-124-779-00	ELECT 10MF 20%	16V
C365	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C366	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C367	1-124-779-00	ELECT 10MF 20%	16V
C368	1-162-638-11	CERAMIC CHIP 1MF	16V
C369	1-162-638-11	CERAMIC CHIP 1MF	16V
C370	1-124-779-00	ELECT 10MF 20%	16V
C371	1-162-638-11	CERAMIC CHIP 1MF	16V
C372	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C373	1-124-778-00	ELECT 22MF 20%	6.3V
C374	1-126-193-11	ELECT 1MF 20%	50V
C375	1-162-638-11	CERAMIC CHIP 1MF	16V
C376	1-124-255-00	ELECT 1MF 20%	50V
C377	1-126-193-11	ELECT 1MF 20%	50V
C378	1-124-779-00	ELECT 10MF 20%	16V
C379	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C380	1-124-779-00	ELECT 10MF 20%	16V
C381	1-124-779-00	ELECT 10MF 20%	16V
C382	1-124-779-00	ELECT 10MF 20%	16V
C383	1-124-779-00	ELECT 10MF 20%	16V
C384	1-124-779-00	ELECT 10MF 20%	16V
C385	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C386	1-163-141-00	CERAMIC CHIP 0.001MF 5%	50V
C387	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C388	1-124-778-00	ELECT 22MF 20%	6.3V
C389	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C390	1-163-127-00	CERAMIC CHIP 270PF 5%	50V
C391	1-124-779-00	ELECT 10MF 20%	16V.
C392	1-163-111-00	CERAMIC CHIP 56PF 5%	50V
C393	1-124-778-00	ELECT 22MF 20%	6.3V
C394	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C395	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C396	1-163-131-00	CERAMIC CHIP 390PF 5%	50V
C397	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C398	1-163-121-00	CERAMIC CHIP 150PF 5%	50V
C401	1-124-779-00	ELECT 10MF 20%	16V
C402	1-163-123-00	CERAMIC CHIP 180PF 5%	50V
C403	1-124-778-00	ELECT 22MF 20%	6.3V
C404	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C405	1-163-986-00	CERAMIC CHIP 0.027MF 10%	25V
C406	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C407	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C408	1-163-089-00	CERAMIC CHIP 6PF 0.25PF	50V
C409	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C410	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C411	1-163-109-00	CERAMIC CHIP 47PF 5%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C412	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C413	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C414	1-162-638-11	CERAMIC CHIP	1MF		16V
C415	1-126-205-11	ELECT	47MF	20%	6.3V
C416	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C417	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C418	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C419	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C420	1-163-114-00	CERAMIC CHIP	75PF	5%	50V
C421	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C422	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C423	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C424	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C425	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C426	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V
C427	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C428	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C429	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C430	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C431	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C432	1-124-779-00	ELECT	10MF	20%	16V
C433	1-124-779-00	ELECT	10MF	20%	16V
C434	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C435	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C436	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C437	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C438	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C439	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C440	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C441	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C442	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C443	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C444	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C445	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C446	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C447	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C448	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C449	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C450	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C451	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C452	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C453	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C454	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C455	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C456	1-124-778-00	ELECT	22MF	20%	6.3V
C457	1-163-118-00	CERAMIC CHIP	110PF	5%	50V
C458	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C459	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C460	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C461	1-126-198-11	ELECT	4.7MF	20%	35V
C462	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C463	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C464	1-163-021-00	CERAMIC CHIP	0.01MF		50V

Ref.No	Part No.	Description			Remark
C465	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C466	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C467	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C468	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C469	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C470	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C471	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C472	1-163-086-00	CERAMIC CHIP	3PF	0.25PF	50V
C473	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C474	1-124-779-00	ELECT	10MF	20%	16V
C475	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C476	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C477	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C478	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C479	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C480	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C481	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V
C482	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C483	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C484	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C485	1-124-779-00	ELECT	10MF	20%	16V
C488	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C489	1-124-778-00	ELECT	22MF	20%	6.3V
C490	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C491	1-124-779-00	ELECT	10MF	20%	16V
C492	1-126-191-11	ELECT	0.47MF	20%	50V
C493	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C494	1-124-779-00	ELECT	10MF	20%	16V
C495	1-124-779-00	ELECT	10MF	20%	16V
C496	1-126-246-11	ELECT	220MF	20%	4V
C497	1-124-778-00	ELECT	22MF	20%	6.3V
C498	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C499	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C500	1-126-208-11	ELECT	47MF	20%	4V
C501	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C502	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C503	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C504	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C505	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C506	1-124-778-00	ELECT	22MF	20%	6.3V
C507	1-126-193-11	ELECT	1MF	20%	50V
C508	1-126-205-11	ELECT	47MF	20%	6.3V
C509	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C510	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C511	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C512	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C513	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C514	1-124-779-00	ELECT	10MF	20%	16V
C515	1-162-638-11	CERAMIC CHIP	1MF		16V
C516	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C517	1-135-146-21	TANTAL. CHIP	0.68MF	20%	25V
C518	1-126-195-11	ELECT	2.2MF	20%	50V
C519	1-163-038-00	CERAMIC CHIP	0.1MF		25V

When indicating parts by reference number, please include the board name.

VA-41

Ref.No	Part No.	Description			Remark
C520	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C521	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C524	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C525	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C526	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C527	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C528	1-163-034-00	CERAMIC CHIP	0.033MF		50V
C530	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C531	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C579	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C580	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C581	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C582	1-126-209-11	ELECT	100MF	20%	4V
C584	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C585	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C586	1-126-207-11	ELECT	33MF	20%	4V
C587	1-126-207-11	ELECT	33MF	20%	4V
C588	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C589	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C590	1-126-205-11	ELECT	47MF	20%	6.3V
C591	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C592	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C593	1-126-206-11	ELECT	100MF	20%	6.3V
C594	1-126-206-11	ELECT	100MF	20%	6.3V
C595	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V
C598	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C600	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C601	1-163-033-00	CERAMIC CHIP	0.022MF		50V

CONNECTOR

CN360	*1-565-543-11	PIN, CONNECTOR (PC BOARD) 4P
CN361	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P

TRIMMER

CV360	1-141-331-11	CAP, VAR, TRIMMER (CHIP)
CV361	1-141-311-11	CAP, VAR, TRIMMER (CHIP)

DIODE

D361	8-719-100-05	DIODE 1S2837
D362	8-719-101-23	DIODE 1SS123
D363	8-719-101-23	DIODE 1SS123
D364	8-719-100-05	DIODE 1S2837
D365	8-719-101-23	DIODE 1SS123
D368	8-719-106-43	DIODE RD9.1M-B1
D372	8-719-100-05	DIODE 1S2837
D400	8-719-911-19	DIODE 1SS119

DELAY LINE

DL360	1-415-593-11	DELAY LINE, ULTRASONIC GLASS

Ref.No	Part No.	Description	Remark

FILTER

FL361	1-577-162-11	FILTER, CERAMIC	
FL362	1-236-186-21	FILTER, BAND PASS	
FL363	1-409-446-21	FILTER, TRAP	
FL365	1-236-188-21	FILTER, BAND PASS	
FL580	1-236-145-11	FILTER, BAND PASS	

IC

IC250	8-759-209-53	IC CXA1204Q	
IC360	8-752-034-39	IC CXA1200AQ	
IC361	8-752-323-46	IC CXL1502M	
IC362	8-752-033-40	IC CXA1201Q	
IC363	8-752-033-74	IC CXA1203N	
IC364	8-759-710-09	IC NJM2233AM	
IC365	8-759-710-09	IC NJM2233AM	
IC366	8-759-100-93	IC UPC393G2	
IC367	8-759-204-51	IC TC40H008F	
IC368	8-759-112-72	IC UPD6142G-101	
IC580	8-741-150-51	IC SBX1505-21	

COIL

L250	1-408-789-21	INDUCTOR CHIP 100UH	
L251	1-408-795-21	INDUCTOR CHIP 330UH	
L252	1-410-393-11	INDUCTOR CHIP 100UH	
L361	1-410-393-11	INDUCTOR CHIP 100UH	
L362	1-412-031-11	INDUCTOR CHIP 47UH	
L363	1-412-031-11	INDUCTOR CHIP 47UH	
L364	1-412-029-11	INDUCTOR CHIP 10UH	
L365	1-410-389-11	INDUCTOR CHIP 47UH	
L366	1-410-383-11	INDUCTOR CHIP 15UH	
L367	1-410-385-11	INDUCTOR CHIP 22UH	
L368	1-410-393-11	INDUCTOR CHIP 100UH	
L369	1-410-393-11	INDUCTOR CHIP 100UH	
L370	1-410-392-11	INDUCTOR CHIP 82UH	
L371	1-410-393-11	INDUCTOR CHIP 100UH	
L372	1-410-393-11	INDUCTOR CHIP 100UH	
L373	1-410-656-11	INDUCTOR CHIP 150UH	
L374	1-410-380-21	INDUCTOR CHIP 8.2UH	
L375	1-408-795-21	INDUCTOR CHIP 330UH	
L376	1-410-655-11	INDUCTOR CHIP 120UH	
L377	1-410-387-11	INDUCTOR CHIP 33UH	
L379	1-410-655-11	INDUCTOR CHIP 120UH	
L380	1-410-657-21	INDUCTOR CHIP 180UH	
L381	1-408-795-21	INDUCTOR CHIP 330UH	
L382	1-410-167-41	INDUCTOR CHIP 820UH	
L383	1-408-795-21	INDUCTOR CHIP 330UH	
L384	1-410-393-11	INDUCTOR CHIP 100UH	
L385	1-410-381-11	INDUCTOR CHIP 10UH	
L386	1-410-392-11	INDUCTOR CHIP 82UH	
L387	1-410-388-21	INDUCTOR CHIP 39UH	
L389	1-410-655-11	INDUCTOR CHIP 120UH	
L390	1-410-377-11	INDUCTOR CHIP 4.7UH	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
L391	1-410-388-21	INDUCTOR CHIP 39UH	
L392	1-410-384-11	INDUCTOR CHIP 18UH	
L393	1-410-387-11	INDUCTOR CHIP 33UH	
L395	1-410-388-21	INDUCTOR CHIP 39UH	
L396	1-410-391-11	INDUCTOR CHIP 68UH	
L580	1-408-797-11	INDUCTOR CHIP 470UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q250	8-729-905-23	TRANSISTOR 2SA1576R	
Q251	8-729-905-35	TRANSISTOR 2SC4081R	
Q252	8-729-905-23	TRANSISTOR 2SA1576R	
Q253	8-729-109-42	TRANSISTOR 2SK94-X2	
Q254	8-729-905-18	TRANSISTOR DTC144EU	
Q361	8-729-101-07	TRANSISTOR 2SB798	
Q362	8-729-905-23	TRANSISTOR 2SA1576R	
Q363	8-729-905-23	TRANSISTOR 2SA1576R	
Q364	8-729-905-23	TRANSISTOR 2SA1576R	
Q365	8-729-905-35	TRANSISTOR 2SC4081R	
Q366	8-729-905-35	TRANSISTOR 2SC4081R	
Q367	8-729-905-23	TRANSISTOR 2SA1576R	
Q368	8-729-905-23	TRANSISTOR 2SA1576R	
Q369	8-729-905-35	TRANSISTOR 2SC4081R	
Q370	8-729-905-35	TRANSISTOR 2SC4081R	
Q371	8-729-905-35	TRANSISTOR 2SC4081R	
Q372	8-729-905-35	TRANSISTOR 2SC4081R	
Q373	8-729-905-35	TRANSISTOR 2SC4081R	
Q374	8-729-905-35	TRANSISTOR 2SC4081R	
Q375	8-729-905-35	TRANSISTOR 2SC4081R	
Q376	8-729-905-35	TRANSISTOR 2SC4081R	
Q377	8-729-905-35	TRANSISTOR 2SC4081R	
Q378	8-729-905-12	TRANSISTOR DTA144EU	
Q379	8-729-905-35	TRANSISTOR 2SC4081R	
Q380	8-729-101-07	TRANSISTOR 2SB798	
Q382	8-729-905-15	TRANSISTOR DTC144WU	
Q383	8-729-905-35	TRANSISTOR 2SC4081R	
Q385	8-729-905-35	TRANSISTOR 2SC4081R	
Q386	8-729-905-35	TRANSISTOR 2SC4081R	
Q387	8-729-905-23	TRANSISTOR 2SA1576R	
Q388	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q389	8-729-905-35	TRANSISTOR 2SC4081R	
Q390	8-729-905-35	TRANSISTOR 2SC4081R	
Q391	8-729-905-35	TRANSISTOR 2SC4081R	
Q392	8-729-905-35	TRANSISTOR 2SC4081R	
Q393	8-729-905-35	TRANSISTOR 2SC4081R	
Q394	8-729-905-23	TRANSISTOR 2SA1576R	
Q395	8-729-905-12	TRANSISTOR DTA144EU	
Q396	8-729-905-18	TRANSISTOR DTC144EU	
Q397	8-729-905-18	TRANSISTOR DTC144EU	
Q398	8-729-905-18	TRANSISTOR DTC144EU	
Q399	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q400	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q401	8-729-122-63	TRANSISTOR 2SA1226	
Q402	8-729-122-63	TRANSISTOR 2SA1226	
Q403	8-729-122-63	TRANSISTOR 2SA1226	
Q404	8-729-122-63	TRANSISTOR 2SA1226	
Q405	8-729-905-18	TRANSISTOR DTC144EU	
Q406	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q407	8-729-905-57	TRANSISTOR DTA124EU	
Q408	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q409	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q410	8-729-905-35	TRANSISTOR 2SC4081R	
Q411	8-729-905-35	TRANSISTOR 2SC4081R	
Q412	8-729-905-35	TRANSISTOR 2SC4081R	
Q413	8-729-905-12	TRANSISTOR DTA144EU	
Q414	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q415	8-729-122-63	TRANSISTOR 2SA1226	
Q416	8-729-905-61	TRANSISTOR DTC124EU	
Q417	8-729-905-61	TRANSISTOR DTC124EU	
Q418	8-729-905-57	TRANSISTOR DTA124EU	
Q420	8-729-905-18	TRANSISTOR DTC144EU	
Q421	8-729-905-35	TRANSISTOR 2SC4081R	
Q423	8-729-903-10	TRANSISTOR FMW1	
Q424	8-729-905-18	TRANSISTOR DTC144EU	
Q425	8-729-905-35	TRANSISTOR 2SC4081R	
Q426	8-729-905-35	TRANSISTOR 2SC4081R	
Q427	8-729-905-23	TRANSISTOR 2SA1576R	
Q580	8-729-905-35	TRANSISTOR 2SC4081R	
Q581	8-729-905-35	TRANSISTOR 2SC4081R	
Q582	8-729-905-35	TRANSISTOR 2SC4081R	

RESISTOR

Ref.No	Part No.	Description				Remark
R251	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R252	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R253	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R254	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R255	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R256	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R257	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R258	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R259	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R260	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R261	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R262	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R263	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R264	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R265	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R266	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R267	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R268	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R269	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R270	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R271	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R272	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R273	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R274	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R275	1-216-295-00	METAL GLAZE	0	5%	1/10W	

When indicating parts by reference number, please include the board name.

VA-41

Ref.No	Part No.	Description				Remark
R276	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R277	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R360	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R361	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R362	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R363	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R364	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R365	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R366	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R368	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R369	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R370	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R371	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R372	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R373	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R374	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R375	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R376	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R377	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R378	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R379	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R380	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R381	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R382	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R383	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R384	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R385	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R386	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R387	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R388	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R389	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R390	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R391	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R392	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R394	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R395	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R397	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R398	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R399	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R401	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R402	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R403	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R405	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R406	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R407	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R408	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R409	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R410	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R411	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R412	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R413	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R414	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R415	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R416	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R417	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R418	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R419	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R420	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R421	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R422	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R423	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R424	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R425	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R426	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R427	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R428	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R429	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R430	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R431	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R432	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R433	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R434	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R435	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R436	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R437	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R438	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R439	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R441	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R442	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R443	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R444	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R445	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R446	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R447	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R448	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R449	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R450	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R451	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R452	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R453	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R454	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R455	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R456	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R457	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R458	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R459	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R460	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R461	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R462	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R463	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R464	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R465	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R466	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R467	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R468	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R469	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R470	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R471	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R472	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R473	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R474	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R475	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R476	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R477	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R478	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R479	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R481	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R482	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R483	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R485	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R486	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R487	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R488	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R489	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R490	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R491	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R492	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R493	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R494	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R495	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R496	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R497	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R498	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R499	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R500	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R501	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R502	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R503	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R504	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R505	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R506	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R507	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R508	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R509	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R510	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R511	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R512	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R513	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R514	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R515	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R516	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R517	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R518	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R519	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R520	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R521	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R522	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R523	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R524	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	

Ref.No	Part No.	Description				Remark
R525	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R526	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R527	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R528	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R529	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R531	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R532	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R533	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R535	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R536	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R537	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R538	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R539	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R540	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R541	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R542	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R543	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R544	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R545	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R546	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R547	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R548	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R549	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R550	1-216-138-00	METAL GLAZE	3.3	5%	1/8W	
R551	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R552	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R553	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R554	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R555	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R556	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R557	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R558	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R559	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R560	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R561	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R562	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R563	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R564	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R565	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R566	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R567	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R568	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R570	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R571	1-216-131-11	METAL GLAZE	2.7M	5%	1/10W	
R572	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R573	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R574	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R575	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R576	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R577	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R578	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R580	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R581	1-216-049-00	METAL GLAZE	1K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R582	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R584	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R585	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R586	1-216-009-00	METAL GLAZE 22 5% 1/10W	
R587	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R588	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R589	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R590	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R591	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R592	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R593	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R595	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R596	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R597	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R598	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R599	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R600	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R601	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R602	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R603	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R604	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R605	1-216-015-00	METAL GLAZE 39 5% 1/10W	
R606	1-216-015-00	METAL GLAZE 39 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV250	1-230-873-11	RES, ADJ, METAL GRAZE 47K	
RV360	1-230-867-11	RES, ADJ, METAL GRAZE 1K	
RV361	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV362	1-230-873-11	RES, ADJ, METAL GRAZE 47K	
RV363	1-230-868-11	RES, ADJ, METAL GRAZE 2.2K	
RV364	1-230-868-11	RES, ADJ, METAL GRAZE 2.2K	
RV365	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K	
RV366	1-230-867-11	RES, ADJ, METAL GRAZE 1K	
RV367	1-230-868-11	RES, ADJ, METAL GRAZE 2.2K	
RV368	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV369	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K	
RV370	1-230-873-11	RES, ADJ, METAL GRAZE 47K	
RV372	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K	
RV373	1-230-873-11	RES, ADJ, METAL GRAZE 47K	
RV374	1-230-866-11	RES, ADJ, METAL GRAZE 470	

TERMINAL PIN

Ref.No	Part No.	Description	Remark
TP364	1-535-622-11	PIN, TERMINAL	
TP365	1-535-622-11	PIN, TERMINAL	

CRYSTAL

Ref.No	Part No.	Description	Remark
X001	1-577-117-21	VIBRATOR, CRYSTAL (4.43MHz)	
X250	1-567-827-11	VIBRATOR, CRYSTAL	

****

*A-7070-733-A FV-1 BOARD, COMPLETE (Ref.No. ********************** 5,000 Series)

CONNECTOR

Ref.No	Part No.	Description	Remark
CN160	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	

SWITCH

Ref.No	Part No.	Description	Remark
S160	1-571-101-11	SWITCH, SLIDE (POWER)	
S161	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (SLOW)	
S162	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (FRAME)	
S163	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (PAUSE)	
S164	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (PB)	
S165	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (FF)	
S166	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (STOP)	
S168	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (REW)	

****

*A-7070-743-A FD-6 BOARD, COMPLETE (Ref.No. ********************** 5,000 Series)

CONNECTOR

Ref.No	Part No.	Description	Remark
CN150	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	

SWITCH

Ref.No	Part No.	Description	Remark
S150	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (ZERO MEMO)	
S151	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (EDIT REV)	
S152	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (DATE)	
S153	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (RESET)	
S154	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (EDIT CUE)	
S155	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (TIME)	

****

*A-7070-744-A EJ-4 BOARD, COMPLETE (Ref.No. ********************** 5,000 Series)

SWITCH

Ref.No	Part No.	Description	Remark
S169	1-571-102-11	SWITCH, SLIDE (EJECT)	

****

*A-7061-343-A FC-16 BOARD, COMPLETE (Ref.No. ********************** 5,000 Series)

CAPACITOR

Ref.No	Part No.	Description	Remark
C160	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C161	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C162	1-162-638-11	CERAMIC CHIP 1MF 16V	
C163	1-162-638-11	CERAMIC CHIP 1MF 16V	
C164	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C165	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C190	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C191	1-124-246-61	ELECT 6.8MF 20% 35V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C192	1-124-246-61	ELECT 6.8MF	20%		35V
C193	1-163-101-00	CERAMIC CHIP 22PF	5%		50V
C194	1-163-038-00	CERAMIC CHIP 0.1MF			25V
C195	1-163-105-00	CERAMIC CHIP 33PF	5%		50V
C196	1-163-021-00	CERAMIC CHIP 0.01MF			50V
C197	1-163-034-00	CERAMIC CHIP 0.033MF			50V
		CONNECTOR			
CN191	*1-566-181-11	PIN, CONNECTOR (PC BOARD) 2P			
		TRIMMER			
CT190	1-141-331-11	CAP, VAR, TRIMMER (CHIP)			
		DIODE			
D160	8-719-404-12	DIODE MA159			
D161	8-719-105-73	DIODE RD4.7M-B2			
D190	8-719-105-99	DIODE RD6.2M-B1			
		IC			
IC190	8-759-142-88	IC UPD7503G-A80-12			
IC191	8-759-937-56	IC S-8054ALB-LM-S			
		TRANSISTOR			
Q160	8-729-905-23	TRANSISTOR 2SA1576R			
Q161	8-729-905-23	TRANSISTOR 2SA1576R			
Q163	8-729-905-23	TRANSISTOR 2SA1576R			
Q164	8-729-905-23	TRANSISTOR 2SA1576R			
Q165	⚠8-729-109-42	TRANSISTOR 2SK94-X2			
Q166	8-729-905-35	TRANSISTOR 2SC4081R			
Q167	8-729-903-97	TRANSISTOR FMS1FE			
Q168	8-729-905-35	TRANSISTOR 2SC4081R			
Q169	8-729-810-10	TRANSISTOR 2SA1676			
Q169	8-729-905-12	TRANSISTOR DTA144EU			
Q190	8-729-810-19	TRANSISTOR 2SC4396			
Q191	8-729-905-23	TRANSISTOR 2SA1576R			
		RESISTOR			
R120	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R121	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R122	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R123	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R124	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R125	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R126	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R127	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R128	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R129	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R130	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R131	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R132	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R133	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R134	1-216-073-00	METAL GLAZE	10K	5%	1/10W

Ref.No	Part No.	Description			Remark
R135	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R136	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R137	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R138	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R139	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R140	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R141	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R142	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R143	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R144	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R160	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R161	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R162	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R163	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R164	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R165	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R166	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R167	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R168	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R169	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R170	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W
R171	1-216-115-00	METAL GLAZE	560K	5%	1/10W
R172	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R173	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R174	1-216-530-00	METAL GLAZE	390K	1%	1/10W
R175	1-218-167-11	METAL GLAZE	330K	1%	1/10W
R176	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R177	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R178	1-216-295-00	METAL GLAZE	0	5%	1/10W
R190	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R191	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R192	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R193	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R194	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R195	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R196	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R197	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R198	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R199	1-216-073-00	METAL GLAZE	10K	5%	1/10W
		SWITCH			
S190	1-570-870-21	SWITCH, SLIDE (AUTO LOCK)			
S191	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (TITLE 1)			
S192	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (TITLE 2)			
S193	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (MEMORY)			
S194	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (COLOR)			
S195	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (FOCUS)			
S196	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE)(BACK LIGHT)			
S197	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (SHUTTER SPEED)			
		TERMINAL PIN			
TP190	*1-535-622-11	PIN, TERMINAL			

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
TP191	*1-535-622-11	PIN, TERMINAL	

CRYSTAL

Ref.No	Part No.	Description	Remark
X190	1-527-997-21	VIBRATOR, CRYSTAL (32.768KHz)	

****

*A-7061-344-A MC-24 BOARD, COMPLETE (Ref.No. 2,000Series)
****

CAPACITOR

Ref.No	Part No.	Description	Remark
C001	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C002	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C585	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C586	1-124-225-00	ELECT 100MF 20% 6.3V	
C587	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C588	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C589	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C590	1-163-137-00	CERAMIC CHIP 680PF 10% 50V	
C591	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C592	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C593	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C594	1-162-638-11	CERAMIC CHIP 1MF 16V	
C595	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
C596	1-124-225-00	ELECT 100MF 20% 6.3V	
C598	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C599	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN585	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	

DIODE

Ref.No	Part No.	Description	Remark
D585	8-719-105-99	DIODE RD6.2M-B1	

IC

Ref.No	Part No.	Description	Remark
IC585	8-759-820-51	IC LA7293M	

JACK

Ref.No	Part No.	Description	Remark
J585	1-507-921-00	JACK (MIC)	
J586	1-563-454-11	JACK, MINIATURE (MIC DC)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q585	8-729-905-35	TRANSISTOR 2SC4081R	

RESISTOR

Ref.No	Part No.	Description	Remark
R585	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R586	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R587	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R588	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R589	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R590	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R591	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R592	1-216-095-00	METAL GLAZE 82K 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S585	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE)	(REC START/STOP)

****

*A-7070-734-A PA-13 BOARD, COMPLETE (Ref.No. 4,000Series)
****

JACK

Ref.No	Part No.	Description	Remark
J991	1-550-104-32	HOLDER, BATTERY	

COIL

Ref.No	Part No.	Description	Remark
L990	1-412-026-11	INDUCTOR CHIP 1UH	
L991	1-412-026-11	INDUCTOR CHIP 1UH	
L992	1-412-026-11	INDUCTOR CHIP 1UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS990⚠	1-532-841-21	LINK, IC	
PS991⚠	1-532-841-21	LINK, IC	

RESISTOR

Ref.No	Part No.	Description	Remark
R990	1-216-295-00	METAL GLAZE 0 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S990	1-570-870-21	SWITCH, SLIDE (EDIT)	

CONNECTOR

Ref.No	Part No.	Description	Remark
W991	1-559-927-41	CABLE, FLAT (1.0MM PITCH) 5P	
W992	1-535-658-11	TERMINAL BOARD	

****

*A-7070-747-A ZM-8 BOARD, COMPLETE (Ref.No. 4,000Series)
****

SWITCH

Ref.No	Part No.	Description	Remark
S970	1-571-315-11	SWITCH, KEY BOARD (TELE)	
S971	1-571-315-11	SWITCH, KEY BOARD (WIDE)	

****

A-7070-748-A SW-92 BOARD, COMPLETE (Ref.No. 4,000Series)
****

CONNECTOR

Ref.No	Part No.	Description	Remark
CN930	*1-566-189-11	PIN, CONNECTOR (PC BOARD) 10P	
CN931	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	
CN932	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		DIODE	
D910	8-719-911-19	DIODE 1SS119	
		JACK	
J930	1-565-276-11	JACK, ULTRA SMALL 1P	
J931	1-507-921-00	JACK	
		COIL	
L930	1-410-369-11	INDUCTOR CHIP 1UH	
L932	1-410-369-11	INDUCTOR CHIP 1UH	
		SWITCH	
S930	1-553-977-00	SWITCH, SLIDE (STAND BY)	
S931	1-570-689-11	SWITCH, KEY BOARD (REC START/STOP)	

****

MISCELLANEOUS

****

	1-464-993-11	CONVERTER, DC-DC	
	1-535-574-11	TERMINAL, SHAFT GROUND	
	1-542-101-11	MICROPHONE (C-2020)	
	1-547-284-11	LENSE, ZOOM (VCL-906XB)	
	1-562-879-11	CONNECTOR, CARD EDGE 19P	
	1-562-880-11	CONNECTOR, CARD EDGE 15P	
	1-566-535-11	CONNECTOR, FPC (ZIF) 19P	
	1-574-083-11	CABLE, FLAT (1.0MM PITCH) 15P	
	1-626-231-11	FP-118 FLEXIBLE BOARD	
	1-626-232-11	FP-123 FLEXIBLE BOARD	
	1-626-233-11	FP-124 FLEXIBLE BOARD	
	1-807-238-11	SENSOR, DEW CONDENSATION	
	1-808-385-11	L.C.D	
C901	1-161-032-00	CAP CERAMIC 0.01MF	
IC600	A-7090-878-A	CCD ASSY (CCD IMAGER)	
J361	1-537-142-11	TERMINAL BOARD (AV OUT)	
L951 ⚠	1-451-310-21	DEFLECTION YOKE (B/W)	
M901	A-7048-177-A	DRUM ASSY (DGU-27B-R)	
M902	8-835-309-01	MOTOR, DC BHF-3301C (CAPSTAN)	
M903	1-541-508-11	MOTOR, DC (LA14-323F) (LOADING)	
M904	3-707-442-01	METER, IG (IPIS MOTOR)	
M905	3-707-448-01	MOTOR UNIT, AF	
M906	3-707-452-01	MOTOR UNIT, ZOOM	
S902	1-553-226-00	SWITCH, LEAF (CC DOWN)	
V901 ⚠	1-546-065-11	CATHODE-RAY TUBE, B/W (M01JVV47WB)	

****

ACCESSORIES AND PACKING MATERIALS

****

Part No.	Description	Remark
3-786-051-41	MANUAL, INSTRUCTION	
3-786-051-51	MANUAL, INSTRUCTION (AEP/E MODEL)	
3-786-051-61	MANUAL, INSTRUCTION (AEP MODEL)	
3-786-051-71	MANUAL, INSTRUCTION (E MODEL)	
*3-725-185-01	CUSHION (UPPER)	
*3-725-186-01	CUSHION (LOWER)	
*3-764-631-12	INSTRUCTION, DEW CONDENSATION	
4-344-284-00	BAG, PROTECTION (AEP/AUS MODEL)	

ACCESSORIES AND PACKING MATERIALS (KIT)

1-571-164-11	SWITCH, ANTENNA CHANGE (CABLE)	
3-712-673-01	SCREWDRIVER	
3-712-595-21	BELT, SHOULDER	
*3-725-169-31	SLEEVE, ACC KIT	
*3-725-170-02	CUSHION (UPPER), ACC	
*3-725-171-01	CUSHION (LOWER), ACC	
*3-728-625-21	INDIVIDUAL CARTON	
** AC-V30	AC POWER ADAPTOR	
*** NP-55	RECHARGABLE BATTERY	
*** RFU-89EA	RF MODULATER	

** MARK PARTS IS AVAILABLE FOR REPIR SERVICE

** MARK PARTS IS AVAILABLE AS A OPTIONAL ACCESSORIES

****

HARDWARE LIST

****

SCREW

7-621-255-15	SCREW +P 2X3
7-621-255-45	SCREW +P 2X6
7-621-281-15	SCREW +P 2X2
7-621-772-00	SCREW +B 2X3
7-627-850-17	SCREW, PRECISION +P 1.4X2.5
7-627-552-07	SCREW, PRECISION +P 1.7X2.5
7-627-852-18	SCREW, PRECISION +P 1.7X4 TYPE3
7-627-852-38	SCREW, PRECISION +P 1.7X1.8 TYPE3
7-627-553-37	SCREW, PRECISION +P 2X3 TYPE 3
7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT
7-685-203-19	SCREW +KTP 2X5 TYPE2 NON-SLIT

STOP RING

7-624-101-01	STOP RING 1.2 (E TYPE)
7-624-102-04	STOP RING 1.5, TYPE -E

TAPPING

7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT

****

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.